

55743

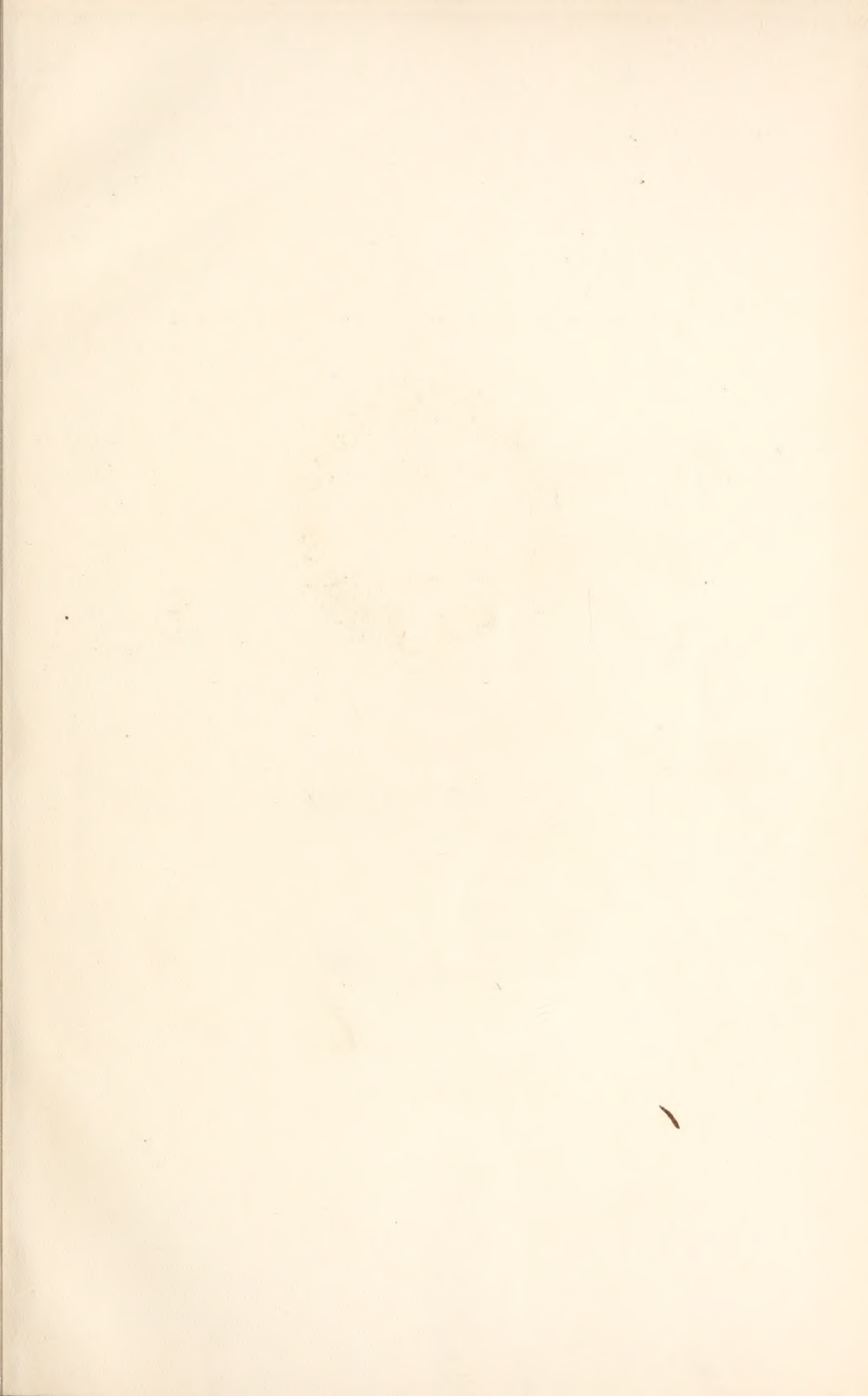


Class _____ No _____

Presented by

H. A. Hare, M.D.

\$2.65





Digitized by the Internet Archive
in 2014

1841

57.

INTERSTATE MEDICAL JOURNAL.

VOLUME TWELVE.

JANUARY—DECEMBER, 1905.

PUBLISHERS:
INTERSTATE MEDICAL JOURNAL Co.,
ST. LOUIS, MO.

JUL 20 1906

EDITED BY

NATHANIEL ALLISON, M. D.
WILLARD BARTLETT, M. D.
WALTER BAUMGARTEN, M. D.
HUGO EHRENFEST, M. D.
MARTIN F. ENGMAN, M. D.
ALFRED FRIEDLANDER, M. D.
JOHN GREEN, JR., M. D.

CARL FISCH, M. D.
H. McC. JOHNSON, M. D.
JESSE S. MYER, M. D.
WARREN B. OUTTEN, M. D.
WILLIAM E. SAUER, M. D.
SIDNEY I. SCHWAB, M. B.
ALBERT E. TAUSSIG, M. D.

OTHO F. BALL, M. D., Managing Editor.
E. J. GOODWIN, M. D., Associate Managing Editor.

COLLABORATORS :

MAX MICHAELIS, M. D.,
Professor of Internal Medicine, University of
Berlin, Germany.
FRANZ VON NEUGEBAUER, M. D.,
Chief of Gynecologic Department Evangelical
Hospital, Warsaw, R

JULIUS NEUMANN, M. D.,
Docent of Obstetrics and Gynecology, Univer-
sity of Vienna, Austria.
JULIUS SCHNITZLER, M. D.
Docent of Surgery, University of Vienna, Aus-
tria; Surgeon in-Chief, Franz Joseph Hospital,
Vienna.

HEINZ WOHLGEMUTH, M. D.,
Berlin, Germany.

INTERSTATE MEDICAL JOURNAL.

VOL. XII.

JANUARY, 1905.

No. 1.

ANNUAL MEDICAL PROGRESS NUMBER.

A REVIEW OF THE MEDICAL LITERATURE OF 1904.

ORIGINAL ARTICLES.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

The chief progress in internal medicine tends toward the development of more exact methods of clinical diagnosis. An effort is being made not only to render these methods more exact, but, at the same time, to simplify them to such an extent that the physician who most requires them can employ them without too great an expenditure of time. Unfortunately our most exact methods are usually very complicated. This applies especially to the clinical study of blood pressure. During the past year or two this subject has been given a new impetus and a practical value which it has not had heretofore. Though its importance has long been realized, the work done in this direction has been very largely confined to physiology and has been engaged in purely out of scientific interest. Increase and decrease in arterial tension may, of course, be recognized by the practiced touch without the aid of a mechanical device, but we know only too well that small differences cannot be detected in this manner. The sphigmomanometer has been modified and simplified until now it can be employed with little loss of time. This innovation has been received with enthusiasm by internists. Since the introduction of the sphigmomanometer in 1855 by Vierordt, a certain importance has been attached to the indication of the blood pressure, but the methods were entirely too complex to permit of its general use. Since this time various efforts have been made to simplify them in order that they might become adapted to clinical purposes, but only in the last year or two have they been rendered practical. There is no doubt now that the sphigmomanometer will occupy as important a place in the physician's armamentarium as does the thermometer. There was a time when the temperature was approximately determined without the use of the ther-

mometer. We now wonder how such a thing was possible. There is little doubt that the time will come, and in the near future, when the same will exist with reference to the recording of the pulse. Of course palpation of the pulse will always be in vogue and will be employed as a routine measure, just as the laying on of hands is still employed to determine, in an approximate way, whether there exists an elevation of temperature. However, in taking the pulse in this manner, we depend entirely upon the muscular sense and this is too variable a quantity, being developed more highly in some individuals than in others. All manner of modifications have been made in the old sphigmomanometer of Vierordt; those of Basch, Marey and Mosso stand out most prominently. They utilized the principle of determining the pressure at which the pulse wave was obliterated, thus obtaining the systolic pressure. The same principle has been employed throughout, but instead of being applied to the finger, the principle of circular compression is used about the arm. The introduction of Riva-Rocci's instrument has perhaps done more toward rendering the determination of blood pressure a practicable procedure than has any other factor. The sphigmomanometer, in order to be useful to the physician, must be reasonably accurate, free from objectionable errors, easily applied and portable, all of which have been accomplished in the recent development of the appliance. Those which seem best fitted for general use at present are those of Riva-Rocci, Cook, Janeway and Martin. Among the recent important contributions on the subject are those of Gaertner on the determination of the pressure in the right auricle as a new clinical method, of Peters on the same subject, of Frank on the direct registration of the heart sounds, of Frey on venous pressure and of Cushing on blood pressure, etc.

Though the year has brought forth no marked advancement in the methods of diagnosis of cancer of the stomach and of ulcer of the stomach, it will no doubt be well to point out here the great importance of such in the light of recent developments in the surgery of the stomach by such surgeons as Mayo, Moynihan, Mikulicz, Ochsner and others. The recent accomplishments of the surgeon in gastric surgery have been little short of marvelous. In ulcer of the stomach gastroenterostomy has given such excellent results that it seems to be the rational treatment in all of those cases in which systematic treatment has failed to produce a cure or in those which have been "cured" several times and have undergone relapses. The mortality following gastroenterostomy in benign cases of ulcer has been reduced to such an extent by the improved technique and skill of the surgeons that it need not be considered more dangerous than laparotomy performed for any other purpose. We are compelled to concede that the medical treatment of chronic ulcer has not been altogether satisfactory and that we as internists have made but comparatively little progress in that direction during the past year or

two. Where we fail, therefore, we should have no hesitancy in calling upon the surgeon.

A great difficulty arises here, however, with reference to diagnosis. There are many cases of chronic ulcer of the stomach which do not present the cardinal symptoms pointed out by the text-books, and are in so far atypical; on the other hand, disturbances of a functional nature often simulate ulcer; therefore, if we would not bring stomach surgery into disrepute, we must use every care in the matter of diagnosis before referring these cases to the surgeon. In no case should operation be recommended until the case has been carefully observed in a systematic way. There is no doubt that many cases of so-called gastric neuroses will not only reveal the scars of old ulcers, but will also be relieved of many of the unpleasant symptoms by gastroenterostomy.

Unfortunately, this year has brought us no nearer to the solution of the early diagnosis of carcinoma of the stomach than we have been heretofore, though a new impetus has been given to this subject also by the admirable work done in this direction by the skilled surgeon. The surgeon has always complained, and justly so, that the internists either failed to recognize early cases of carcinoma or considered them hopeless from the moment the diagnosis was made. Recent statistics show the latter belief to be unfounded. It is true we cannot feel absolutely sure of the existence of cancer of the stomach until the tumor can be palpated; however, we can feel sufficiently so to justify a probable diagnosis. If one waits until a tumor can be felt in order to establish a diagnosis, then the claim of the surgeon is entirely justified, and this delay is in a measure to blame for the great mortality following operations for cancer of the stomach. If satisfactory results are to come from stomach surgery, then no means should be spared in making as complete a diagnosis as possible by our present methods. If there be still doubt, then an exploratory operation should be recommended. The general consensus of opinion on this point is that it is far better to explore in vain than to defer too long.

In an effort to simplify the Gruber-Widal reaction as a diagnostic measure in typhoid fever, Ficker has produced a modification of this method which promises to replace the Widal reaction. When a method has been rendered as indispensable to the general practitioner as has this, it should be made as accessible to all as possible. Ficker considered his efforts in this direction especially called for, inasmuch as bacteriological methods, in spite of the progress that has been made in them, has not directly helped the practitioner. Most of the methods have been so complex that they cannot be carried out without a deep knowledge of bacteriology and without a complete bacteriological laboratory. Physicians at most have been able to make examination for gonococci and for tubercle bacilli in the sputum. Even the latter examinations, as usually employed, are worthless unless the result is decidedly positive. The

negative findings in the examination for tubercle bacilli as conducted by the practitioner, are without value. The results indicate simply that in one or two hundred fields of a milligram of sputum spread over a microscopic slide there are no tubercle bacilli. In order for this method to give positive results there must be 20,000 tubercle bacilli in a gram of sputum, and when this is the case sufficient clinical signs are present to permit of a diagnosis without the bacteriological examination. This explains, according to Ficker, why bacteriological examinations are of so little value to the practitioner. Nearly all of the methods of diagnosis depending upon bacteriology depend upon a well equipped laboratory and are very tedious. The importance of such an examination is indicated in the demands for bacteriological stations. This indicates, too, that typhoid fever is not easy of detection at the bedside, especially for young physicians, who have seen but few cases during their three to five years at college.

In order to render the Widal reaction more practicable, he considered the following points necessary: 1. The necessity of using the living typhoid culture must be overcome, in view of the fact that it requires a complete equipment for that purpose. 2. This preparation, free from living typhoid bacilli and containing the specific agglutinating substance, must keep well. 3. During the time of observation there must be no tendency to spontaneous clarification. 4. The reaction must be visible to the naked eye, and the end reaction must be constant. 5. It must not require, as does the Widal reaction, the constant attention of the observer through a period of two hours. 6. The reaction must take place in the temperature of the room without the necessity of a culture room. 7. The preparation must be influenced in exactly the same way as in the suspension of living bacilli.

Ficker has succeeded in producing a fluid which he claims takes the place of the living typhoid culture, and which fills all the above requirements. This substance, however, requires very careful preparation and is practically a suspension of dead bacilli. It is a slightly cloudy, sterile fluid which, in a dark, cool place, will keep for a long period of time. Blood serum is obtained from the patient and diluted ten times with sterile saline solution; with graduated pipettes 0.2 and 0.1 c. cm. of this dilution is placed in glasses No. 1 and No. 2, containing 0.8 and 0.9 ccm. The third glass contains the so-called "diagnosticum" without the blood serum. The tubes, the contents being thoroughly mixed, are permitted to stand ten to fourteen hours—longer than twenty-four hours is never permissible. The positive reaction manifests itself in a clarification of the fluid and an agglutination of the tubercle bacilli in the center and bottom of the glass.

Gramann made a series of careful investigations relative to the Ficker serum diagnosis of typhoid fever and the results of his series were very satisfactory. He states that before it can be accepted as absolutely

reliable and constant, it must be tried in the so-called abortive, paratyphoid and convalescent stages.

Meyer reviews the disadvantages of the Widal reaction, and sums them up in the statement that inasmuch as the agglutination does not appear in the blood for several days after the inception of the disease, the serum reaction often gives no clue at the time when the difficulty of diagnosis is the greatest. This reaction is not an absolutely specific one but in a great degree a relative one. This is shown in the fact that the blood of some cases of undoubted typhoid presents a negative reaction, while the blood of others that have never had typhoid gives a positive reaction. A proper performance of the reaction requires very complicated apparatus and careful technique. In view of the latter fact he made a series of careful observations concerning the value of the Ficker reaction. He finds that it overcomes this last objection nicely by simplifying both the technique and the requirements, inasmuch as there are required for this reaction a suspension of dead typhoid bacilli, some physiological salt solution, a pipette and a few test tubes. In order to determine the value of this reaction as compared with the Widal, he made examinations of the blood of typhoid and non-typhoid cases, of the blood of the living and of the dead and the blood of animals. He found the results of the two reactions practically identical, and concludes that "the Ficker reaction not only leads to the same results as the original Widal reaction, but for theoretical and practical reasons is to be preferred, and is, therefore, to be highly recommended to clinicians and practitioners."

Radzikowski also tried the value of Ficker's method and found the results very satisfactory. In every case in which the Widal reaction gave positive results, the Ficker method did likewise, and *vice versa*. In six cases four tests were made with the usual microscopic Widal reaction, with virulent typhoid bacilli in the hanging drop, in a dilution of 1 to 50; the microscopic Widal, with bouillon in dilutions of 1 to 50, the modification of Ficker, with the "typhus diagnosticum" dilution 1 to 50, and the same in a dilution of 1 to 100. These tests were made in different stages of the disease in the second and third weeks, in relapse and in convalescence. He finds the tests possible also in the dried blood specimen. The serum of individuals who were not afflicted with typhoid never produced agglutination in dilutions of 1 to 50. He believes it can replace the virulent culture used in the Widal reaction and that it has great advantages over it.

Ehrson finds the "Ficker typhus diagnosticum" quite reliable in every particular, occurring in three to twenty-four hours in typhoid and not occurring at all in other febrile conditions. He reports a very interesting series of cases and praises the method highly.

Different methods have been employed in obtaining the blood serum. Ficker himself recommends cupping and incision, collecting the blood in a specially adapted test tube.

Gramann considers the cupping tedious and unnecessary and obtains the blood from a simple incision.

Blum removes 1. c.c. of blood from a vein of the arm through a sterilized syringe and permits the expression of the serum to take place in the inverted syringe. It is then drawn off with pipettes.

Clamann collects the blood from an incision, sucking it into a syringe, permitting it to coagulate in the inverted syringe and then expells the serum into a sterilized test tube.

Kreissl believes that the positive result of the Widal reaction points with the greatest probability to the existence of typhoid fever, providing the existence of a previous typhoid can be excluded. The negative reaction does not speak with absolute certainty, however, against typhoid. The procedure has a special significance in light cases that do not permit of diagnosis from the clinical symptoms alone. He considers that his experience justifies the conclusion that the Widal reaction is an early diagnostic aid. No conclusion as to the character or severity of the disease can be drawn from the degree of agglutination. He finds that the agglutination of typhoid bacilli from the roseola spots gives fairly good results though not infallible.

Lubowski and Steinberg found the Widal reaction positive in otitis media, due to the proteus, staphylococcus and streptococcus infections, in dilutions of 1 to 80. Investigations showed that in nearly all cases of proteus infection there was an agglutination of typhoid bacilli; a similar agglutination was noticed in staphylococcus infections, but not in the streptococcus infections.

Since the reports of Gruenbaum and Koehler in reference to the agglutination of typhoid bacilli by icteric blood, a large series of reports have been presented which varied greatly in their result. Koehler considers taurocholic acid an agglutinating body and claims to have gotten positive results in a dilution of 1 to 60. Many observations have been recorded since these publications and, though there is still a variety of opinions, the preponderance of evidence is opposed to the theory that the bile itself possesses any such qualities.

Kemerer thinks there is no justification for this belief. In fifty cases he could not satisfy himself that the presence of bile pigments and acids in the blood produced the reaction and in only two cases did he succeed in getting the reaction at all in dilutions as great as 1 to 40, and in only one case in a dilution of 1 to 75. In 94 per cent. he had negative results. Koehler stated that according to his own investigations the Widal reaction had lost materially in reliability as a diagnostic aid in typhoid fever, basing this statement on the belief that icteric blood produces agglutination. Kemerer, on the other hand, concludes that icterus very seldom produces agglutinations in dilutions of 1 to 40 or over, that the Widal reaction, and especially the Ficker modification, is still our most reliable aid for the differential diagnosis of abdominal typhoid,

and that in all probability the agglutinations occurring in dilutions of 1 to 100 or over were practically specific for typhoid.

Steinberg, in a series of investigations on this phenomenon, concludes there is no constant relationship between the presence of icterus and the agglutinating action of the blood on typhoid bacilli. A marked number of cases in which icterus existed from various causes gave no reaction whatever. This would indicate that the constituents of the bile have no agglutinating qualities.

It is stated by Eckardt and Koenigstein that the bile as such does not possess agglutinating qualities. It would seem, therefore, that where agglutination occurs in icterus, it is due to factors accompanying the condition and not to the presence of bile in the blood.

While it is now pretty generally conceded that the Widal reaction and its modification by Ficker are most reliable methods of diagnosis of typhoid fever, there are still serious objections to be raised on account of the late period at which it is possible to obtain positive results.

Koch does not consider the Widal reaction an early diagnostic aid and recommends the examination of the feces by the Drigalski and Conradi method. The culture media recommended by them is stained with litmus; when inoculated with feces, the acid-forming colonies of the colon bacilli are distinguished from the alkaline of the typhoid. In this manner the diagnosis has been made as early as the second day. The value of this method in the prevention of the spread of the disease he considers very important. Since the disease is communicated only through the excreta from human beings, it is very important from the standpoint of the hygienist that the presence of the disease be detected as early as possible in order that necessary precautions may be taken.

Herbert examined the excretions of ninety-eight convalescents; the urine 228 times and the feces 216 times. Typhoid bacilli were found in the urine of 18 per cent. and in the feces of 3 per cent. of the cases. They were present in very large numbers in the urine and in very small numbers in the feces. In the cases in which the findings were positive, four were severe, eleven moderate and three very light. It is of great practical importance to know that the bacilli are so often found in the urine of the convalescent during the first four weeks. The length of time intervening between the last of the fever and the disappearance of the bacilli from the urine is from eight to twenty-seven days. In the second month of re-convalescence the excretions, with but one exception, were free from bacilli.

Steffanelli and Cumbo examined the urine of twenty-one cases of typhoid, and found the bacilli in seven. In three of the cases bacterium coli were found. The presence of typhoid bacilli in the urine does not necessarily go hand-in-hand with albuminuria. In the blood of sixteen cases, the bacilla were found in six. In four punctures of the spleen there was one positive. The bacteriological examination of the urine

has a diagnostic significance, but the value of the examination is lessened by the difficulty of determining the identity of the bacilli with the Eberth bacilli. Examinations of the blood in the hands of Rosenberger, Courmont and Lesieur, Ruedinger and others have had excellent results. It is possible that the bacilli are present in all cases, and have been found in a large majority of those examined. In most cases they may be found before the Widal gives the positive reaction.

As to the relative value of the various diagnostic measures, namely, the Widal reaction, the Ficker reaction, the examination of the feces, of the urine, of the blood and of the roseola spots, the probabilities are that in spite of the period at which the test is positive the Ficker will prove the most popular because of its simplicity and the ease with which it may be carried out by any physician, regardless of his knowledge of bacteriologic technique.

Considerable work has been done in paratyphoid fever, and the disease is now practically considered an entity. It has been differentiated from typhoid fever through bacteriological examinations, and is found to be due to an organism standing, as it were, between the typhoid bacillus and the bacterium coli. The course of the disease is mild, the prognosis good and the treatment the same as typhoid. At the present time the disease must be considered, according to Keith and Scott, a general acute infection, in which there are no definite local lesions.

Germann believes that leucopenia, which usually exists in typhoid, has a diagnostic significance and can be utilized as a diagnostic point. The decrease of leucocytes is at the expense of the polynuclear leucocytes, the mononuclear leucocytes being somewhat increased. Polynuclear leucocytes in a febrile typhoid would speak, therefore, for a complication of some sort. The eosinophile cells, which practically disappear during the acute stage, reappear in the convalescence. Their reappearance, therefore, is to be considered a favorable sign. He believes that the increase of eosinophiles in doubtful cases excludes typhoid. In connection with the serum diagnosis and Ehrlich's diazo reaction, leucopenia at the expense of the polynuclear cells is of great significance.

Kost and Gutig found leucopenia in 92 per cent. of their typhoid cases. They found it also present in measles, Banti's disease, tuberculosis of the lungs, malaria and severe anemia; however, these are conditions which are rarely confounded with typhoid, consequently the presence of leucopenia does not affect its importance in the differential diagnosis of typhoid.

Stein and Korte found that while the blood serum of typhoid convalescents exerts no immunizing influence against typhoid, a large series of cases showed that the serum of the febrile stage or the stage following has a bactericidal action in 1 to 1,000 dilutions, and in many cases in a dilution of 50,000. They suggest that this method might be

used in the diagnosis of cases in which the Widal reaction is not satisfactory, and that it would have the advantage of permitting a series of examinations to be started within a half hour and results to be obtained within eight hours.

Shiga made a series of examinations in the active immunization of human beings against the typhoid bacillus, utilizing himself as a subject. He succeeded in producing in himself the antibodies, and would place great significance on this fact. The investigations are too meagre, however, to permit of definite conclusions.

Einhorn applied the serum treatment to a number of cases, and reports his results as very satisfactory. Though his material was too small to permit him to come to far reaching conclusions, he corroborates, in part at least, the conclusions of Jez. He finds that while it does not shorten the disease it does improve the general condition. The sensory and nervous symptoms are especially much improved, sleeplessness, headache, restlessness, delirium, etc., disappear. He believes the treatment is already of value, but that we will soon have more potent sera.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

It cannot be claimed for the year which has just drawn to a close that it has seen the advent of any new idea which will ever rival in importance hæmostasis, anesthesia or the Roentgen light; still there is much to recount which marks the steady advance of the science and art of surgery, much that will benefit mankind through the relief of suffering and the prolongation of life. While, perhaps, no epoch-marking discovery has been made during the past twelve months, still work of more than ordinary merit has appeared, and it is far from the reviewer's purpose to discredit or even belittle the same by the comparison with which this chapter opens. In a resume of this length, it is not possible to even refer to all of merit that has appeared, and even if it were, still it would hardly be in keeping with the idea of a "progress number" to review papers which do not bring out something absolutely new, mark advances in lines of thought already established, or at least treat of maladies seen so rarely as to be matters of more than usual interest. Such a rehash can further not be complete when viewed from the standpoint of each and every reader, because the reviewer is sure to give his attention to the material which is of greatest interest to himself, and, again, the thoughts which appeal to him as new or especially noteworthy may seem by no means so to him for whose eyes the finished product is intended.

In a general surgical way, the observations of Peterson on chronic pyemia are of interest. He saw one such case drag over two years of suffering, the various lesions having their origin in feruncles on the neck, these containing the staphylococcus albus. Metastatic abscesses formed in the kidney, foot, both lower legs, as well as an osteomyelitis of the vertebral body and an empyema of the knee. Kausch developed some valuable ideas bearing upon the relation of diabetes to surgical possibilities. He says that ether is by all means the anesthetic for these individuals; that it must be given early in the morning, and that the urine must be made alkaline before any operation is to be attempted. Some rather astonishing reports are made by Jordan regarding late recurrence in cancer. He tells of one on the tongue as late as ten years after the first operation, and another of the breast, in which repeated operations have been done during the past fifteen years, with the patient now apparently healthy. The old question of how best to treat subcutaneous fractures receives an added interest from a recital of the experience of Fritz Koenig, who opened up and wired a number at the expiration of the first week. He had no infections, and saw none but perfect results, the procedure being undertaken when the x-ray showed that a perfect reposition could not be expected by other means. v. Mangoldt met with marked success in the transplantation of detached boneperiosteum flaps, succeeding thus in curing a pseudarthrosis as well as in repairing various bone defects. It is commonly thought that fracture of the neck of the femur is essentially a lesion of the aged, still Lammers was able to demonstrate with the x-ray the fifth authentic case under the age of twenty, his patient being a boy of four and a half.

After examining four hundred cases Reich came to the conclusion that a leucocyte count is by no means an absolutely reliable guide in every case. Where there is a high temperature, with normal number of white cells, it is rarely a suppurative trouble; they are inconstant in malignant tumor cases, but may be of great value in determining the cause of a complication after operation. Vischer made experiments in inoculating a melano-sarcoma, with results which at first seemed conclusive. He produced small pigmented tumefactions in the peritoneum and other tissues, but none of the animals died. The microscope showed these nodules to be merely granulomata, in which the sarcoma pigment was retained, the cells having disappeared. Kelling believes that he has solved the problem of malignant tumor formation by the process of biochemistry. He considers these tumors made up of cells foreign to the human organism, and by introducing portions of mascerated chicken embryos into the veins of dogs, claims to have produced something like malignant adenomata in liver and lymph nodes. Most authorities take the stand that cancer cannot be transmitted, but Dagonnet believes that the many negative results are due to mechanical errors, since he claims to have reproduced in animals tumors and metastases which had a struc-

ture identical with growths taken from the human body. The very interesting combination of cancer and sarcoma in the same individual, which had been reported but eleven times in all the history of surgery, occurred for the twelfth time in a case reported by Haberer. There was a sarcoma of the epiglottis, and a cancer of the tongue made its appearance eighteen months later. Something of more than usual interest in the line of cancer inoculation is contained in the report by Wilmanns of a case in which a cancerous tonsil was removed through the most direct route, the jaw being sawn in two at the angle; all other tissues remaining healthy, the growth reappeared some years later in the saw cut, and is regarded as a direct implantation.

From the standpoint of surgical bacteriology, much that is interesting and instructive has appeared. Wyss, from Kocher's clinic, reports the discovery of a new germ, capable of producing osteo-mylitis. It is anaerobic, and from its peculiar appearance, having a halo surrounding it, has been named "bacterium halosepticum." Bertelsmann made the very interesting experiment of examining the blood of two hundred and thirty patients for bacteria. The result was negative in most cases of lymphangitis, erysipelas, peritonitis, etc., while germs were usually found in tendon-sheath phlegmons, acute osteo-mylitis and empyema of joints. He examined four patients suffering from urethral chill, with a positive result in two cases.

The weighty practical matter of cleansing the hands is interestingly treated by Sikemeier, who found a vast difference in the number of bacteria on the hands before and after a brush was used in washing. In some cases he succeeded in producing absolute sterilization simply by using the brush and washing in soap and running water.

To what was written above on diabetes may be added the results of a study on thirty-three cases by Koerner. He divides these into light, moderate and dangerous cases. None of the first, but one-half of the third variety died after surgical intervention; hence he concludes that the disease in a mild form is no contraindication to an otherwise indicated operation, but that surgery is to be practiced upon the severer cases only when a vital indication is present.

The pathology of circulation has received more than the usual share of attention devoted to it, and many cases have been cited to show this or that anomaly. The results of 147 Trendelenburg operations for varicose veins, done at the v. Bruns clinic, cannot fail to be of interest. In only 27 per cent. was the result perfect in every particular from the anatomical standpoint. Still the patient experienced partial or complete relief from suffering in a much larger number of cases. In fact, there was only 16 per cent. in which it could be said that there was no improvement. Vatter reports a most unusual arterial lesion. A man was kicked on the upper abdomen by a horse; there were all the symptoms of an internal hemorrhage, so a laparotomy was undertaken and

the abdomen found well filled with blood. At first a careful search failed to reveal the source of the bleeding, until finally it was seen that the right gastro-epiploic artery had been torn in two. This was ligated and the patient recovered. This singular injury was complicated by nothing more than a small tear on the under surface of the liver. Every surgeon has had sad reason to be interested in the embolic pulmonary affections which complicate abdominal operations now and then, hence the article of Gebele cannot fail to arouse interest. He found that 6.43 per cent. of the 1,196 laparotomies performed at the Munich clinic in ten years were complicated in this way. He experimented upon forty rabbits in order to determine, if possible, what operations predispose to this complication, and in what way emboli reach the lungs; coming to the conclusion that no especial procedures entail this danger more than others, but that all may be followed by its appearance. Germs, but not emboli, can pass through the liver from the portal system; still a broken-down liver focus may indirectly lead to the transport of a tissue embolus to the lungs. It was formerly supposed that formation of an aneurism must intervene before an atheromatous artery could burst spontaneously; but this idea is controverted by the experience of Walther, who operated upon a man two weeks after a sudden attack of pain with swelling of the thigh. He found a simple tear $1\frac{1}{2}$ cm. long in the femoral artery; no aneurism was present, though the vessel showed signs of endarteritis deformans.

Smith wrote to a large number of American surgeons asking for their experience in the accidental injury of the axillary vessels during breast operations. He sums up the result as follows: Very little harm results from injury to the vein, though suture or lateral ligature is to be employed where the injury is not too large. Injuries to the axillary artery are so rare that its effects are not well known. (The reviewer had to excise a two-inch section of the artery for carcinomatous involvement in one case, with no ultimate bad result; there was temporary coolness of the member and absence of the radial pulse.) A unique case which illustrates one of the now well-known dangers of paraffine injections, is reported by Hurd and Holden. During an attempt to correct the shape of a nose into which paraffine had been injected, an embolus was produced and thrown into the central artery of the right retina. All attempts to force out the obstruction by increasing the blood-pressure were without avail. This is the second case of its kind.

In the consideration of suture materials, the various absorbable ones have continued to receive more and more attention. As a substitute for kangaroo tendon it has been proposed that we use the long leg tendons of the various species of crane which abound almost everywhere. Thus we shall have the advantage of securing a smooth, long strand, one easily obtainable, and one which is absorbed in about the same time as that first named. As usual, catgut has been more used than all the

other suture materials put together. The Claudius method of sterilizing it in iodine has been a disappointment to most who have reported its use, from the fact that the gut has deteriorated after lying awhile in the fluid; to remedy which defect it has been proposed that we substitute 60 per cent. alcohol for the water in the solution. It seems probable that this will give the desired results to those who are satisfied in using a suture which has been treated only chemically. Catgut deserves its prominence in the surgical armamentarium from the fact that it is rapidly absorbed. Still it has seemed desirable at the Mikulicz clinic to make it last two or three months in hernia and similar operations, something which has been accomplished by immersing it in a 5 per cent. watery solution of quebracho for twenty-four hours.

Anesthetics have not received the amount of special notice which they did a year or two ago, when so much was written concerning the various mixtures of chloroform and oxygen. Simon states that eucain has taken the place of cocain at Heidelberg because it is so much less dangerous, though equally as effective. Furthermore, it is used in conjunction with adrenalin, 1 to 20000, as proposed by Braun last year. Thus the efficacy of the drug is increased without any ill-effect. Prescott advises nitrous oxide and oxygen for anesthetics of a duration even up to one hour, though it is hardly likely that this method will ever become general on account of the great trouble and expense of giving it. Gant has recently advocated a sterile water anesthesia for office practice in rectal diseases. He claims that injections of water suffice for a local pain destroyer, in short, simple procedures.

In comparing ether and chloroform as far as the West is concerned, it can be well said that ether is making more and more friends at the expense of the other drug, though there was a time when chloroform was used throughout this section to the practical exclusion of other anaesthetics. The reviewer belongs to those who consider ether best administered by the drop method of Witzel or Witzel-Hofmann, *i. e.*, on an open gauze mask, just as chloroform is used. Kemp and Gardner made some very interesting experiments on resuscitating dogs after death from chloroform, using the well-known method of laying bare and compressing the heart. Their method consisted of four steps: (a) Two quick compressions of the heart for each systole; (b), animal lying on the abdomen; (c), artificial respiration with the air-pump; (d), saline infusion. By working forty minutes they succeeded in reviving one animal as long as sixteen minutes after the heart had ceased to beat; however, all their experiments ended fatally within twenty-four hours, because of pneumothorax or post-operative haemorrhage. Similar methods are advocated for the human, though there is no record of cardiac compression having been successful up to date, it alone having been tried.

After 200 skopolamin-morphine anaesthetics, Korff concludes that

0.001 C. Cm. of the former drug and 0.025 of the latter, in broken doses, beginning two and a half hours before the operation, can take the place of any other general anaesthesia. There is no danger, but the effect on different persons is very different. There is no vomiting, and food can be taken as soon as the patient wakes. Occasionally some ether or chloroform must be used in addition.

What seems to be a logical suggestion looking toward the furtherance of nerve repair, comes from Foramitti, who removes arteries from animals and then sews them around the site at which a divided nerve trunk has been united. Animal experiments showed that such a casing prevented the nerve from becoming embedded in a mass of scar tissue growing from the vicinity. Very faint adhesions to the intima were produced, and in consequence of the efficient support thus offered for repair, the method is advocated for the human subject.

Our consideration of the surgery of the head opens with an article by no less an authority than Sir W. Macewen. Writing on the cerebral invasion of pathogenic organisms, he tells us that intra-cranial infections are metastatic in origin in only a small per cent. of the cases; very much oftener there is a direct progress of the infective process by contiguity of affected tissues. This is shown by the fact that infections from the middle ear much oftener cause a basilar meningitis than a brain abscess. Kiliani proposes to reach tumors of the optic chiasmus through raising an immense Wagner flap, having its base at the coronal suture and its convexity reaching to within one-half inch of the root of the nose. He was unable to reach such a growth through an ordinary opening in the right temporal region. In keeping with the trend of modern surgery is the proposition which is now made to treat purulent meningitis in the same way that pus under tension in any other part of the body would be dealt with, viz., by free incision and drainage, a procedure which Hinsberg states has saved twelve lives. It is interesting to note the results which time will bring forth. Every surgeon has been perplexed by the bleeding which so frequently accompanies the making of a scalp flap; hence, every one will be interested in the proposition which Prof. V. Hacker makes for the avoidance of the same. It is to run a series of ligating sutures clear around and just outside the contemplated incision. These threads are to be removed at the time the sutures necessitated by the incision are taken out.

One can hardly imagine any more frightful self-inflicted injury than tearing out of the tongue; strange and unreal as it may seem, such a case is reported by Brouardel as having been seen by him. The patient was a hysterical woman, who tore out all but about an inch of her tongue, in drawing it out for the relief of a respiratory spasm. Bleeding stopped spontaneously, speech was fairly well preserved and the patient made a perfect recovery. A complete hysterical anaesthesia was present in this, the only case of its kind in the literature. The geo-

graphical distribution of hare-lip and cleft-palate were carefully studied by Murry, who found that these anomalies were most frequently seen among the peoples of India, China and Java. In Central Africa and in certain islands of the Southern Pacific, they are, on the contrary, very seldom seen. There can be no doubt that certain families are more often afflicted than others. Langemak experimented on the changes that are possible in salivary glands after stoppage of the efferent duct; finding that stagnation of the contents alone was capable of causing atrophy of gland substance, together with an excessive overgrowth of the connective tissue stroma. It had been suspected that inflammation might be necessary to this process. Investigations recently completed by Biaghi may have an important bearing on certain skull operations. He determined, experimentally, on dogs and rabbits, the fate of transplanted bone flaps after the removal of periosteum, dura, or both. Periosteum has more to do with regeneration than has dura, and after the removal of both, it takes place very slowly indeed. Resorption and regeneration are interdependent, so a suitable prosthesis for skull defects must take the former process into consideration.

In the Prague (German) clinic, resection of the carcinomatous lower lip has given 80.2 per cent. of cures; certainly a most desirable result. This is attributed by Ebel to the fact that the "vizier plastic" with systematic gland excision is employed. This well-known form of operation allows of the widest primary excision and entails the minimum deformity.

The most notable contribution of the year to the surgical treatment of exophthalmic goitre was that of C. H. Mayo, who related an experience of forty cases. Among these there were six deaths; two, however, in patients whom the author says should not have been operated upon. Mayo's position on the question of anaesthesia differs from that taken by many surgeons at the present time, however, it must be admitted that an experience like his entitles him to opinions of his own. He states that he uses cocain for some of the bad cases, but can detect no difference as regards shock or thyroidism, if a local or if a general anaesthetic be used. After removal of an exophthalmic goitre the wound is to be drained as completely as a septic one would be, on account of a leakage of thyroid secretion. Of his cases that survived operation, 508 made an immediate recovery, 353 were cured after months, while the rest were improved. The very bad cases were placed upon the belladonna treatment or x-rayed for two to six weeks before operation to prepare them. The lessons drawn from such an unusually large number of operations deserve more than passing notice.

Surely one of the most important experimental articles which have appeared for a long time is that by Lanz on the effects of extirpation of the thyroid in animals; these cover a period of ten years' work and are interesting in the extreme. A healthy hen lays an egg weighing fifty

or sixty grammes, while she can produce one of but five grammes weight after thyroidectomy. Dogs and cats quickly die in tetanic spasms after complete removal of the gland. One of the last mentioned species had live spermatozoa in his semen at the time of operation, but none at all at the autopsy. The operation was done upon thirty-eight goats with results that are striking, to say the least. Animals of both sexes when operated at less than six months of age become typical cretans and lose the property of reproduction. If one to three years are attained before the ablation, the succeeding manifestations are all far less severe; however, such animals grow old much more rapidly than the normal. Milk secretion disappears and the breasts atrophy. This experimental work and its results form a worthy accompanying chapter for the knowledge of the human subject, furnished us by Kocher and Reverdin, that when the gland is removed men and women lose the power of reproduction; that thyroid extract will restore a man's sexual power and a woman's menses while both remain sterile. However, let a very small portion of the gland remain and the reproductive power will be greatly diminished, at the same time the children will have some of the symptoms of cretinism; however, they will be complete cretins if the same destruction of thyroid tissue takes place in the child as in the mother.

The rarity and sensational nature of intra-thoracic attacks on the oesophagus make any new proposals in this line worth reading at least. Gosset, with the enthusiasm of a Frenchman, writes of the Biondi operation as follows: Through a large opening in the left chest wall, the lower portion of the oesophagus is laid bare, then a portion of the stomach wall is pulled up into the chest through an opening in the diaphragm so that an anastomosis can be made with the side or end of the first named viscus. This rather daring procedure has succeeded upon dogs, and thus allowed the entire stomach to be removed, the duodenum being drawn up for the new union. Equally ingenious seems the idea of Exner, of treating cancer of the oesophagus by the direct application of radium to the stricture. He succeeded in causing an enlargement of the tube in every case, by adapting a capsule containing the chemical to a bougie and introducing it for twenty to thirty minutes at a time. The method has at least the advantage of directness and simplicity.

Stimulated by the service rendered by the x-ray, the removal of foreign bodies from the larynx and lower air passages has become so common as to attract little more than passing notice; in fact the steady advance of the boundaries of our surgical territory has gone on until we respect the integrity of hardly any organ or tissue. Durante, the famous Roman surgeon, proposes a new method for the excision of the larynx. He makes a triangular incision from the angles of the jaw to the manubrium sterni; elevates this, makes a tracheotomy at the lower angle, removes the larynx and sutures the edges of the skin to the edges of the

defect in the pharynx, thus allowing two skin defects to remain, one on either side. In two cases the primary results have been ideal. One of the remote dangers of tracheotomy, namely, secondary hæmorrhage, is beautifully illustrated by Taute, who has seen three patients bleed to death, one from erosion of an aortic aneurism, two others from erosion of the innominate artery; while a fourth serious hæmorrhage from the inferior thyroid vein resulted from an infection in the neighborhood of this vessel. In the literature there are found eighty-five fatal cases of this kind, veins being rarely affected in comparison to arteries.

By far the most important contributions to the surgery of the chest with which the past year is credited are those of Sauerbruch and Brauer, who, although they worked in exactly opposite directions, both accomplished the same thing, viz., succeeded in opening, at the same time, the two pleural cavities without inducing a double pneumothorax and killing the animal. The former did his experiments while the animal's chest was in a chamber from which the air had been partially exhausted, but the latter pumped air into the trachea while he worked, the internal pressure being maintained high enough to more than counterbalance the ordinary atmospheric pressure upon the exterior of the lungs with the chest open. Opinions are greatly divided as to which is the better procedure; the end result seems to be the same in both, while the latter requires far less apparatus. To the well known work of Quincke, Garre and Tuffier on the surgery of pulmonary gangrene must be added five operations by Lejars and a like number by Bazy, published recently. Each had three recoveries, certainly enough to encourage us not to let these cases simply shift for themselves, so to speak, as we did the appendicitis patients in the days when "inflammation of the bowels" covered such a multitude of sins and errors. Monod, too, reports two of these cases, both of which got well after operation.

In Scott and Le Conte's very instructive article on the medical and surgical considerations of pyopericarditis they report three out of four patients cured by operation. The point best for explorative puncture is clearly given as follows: the fourth or fifth intercostal space as close as possible to the sternum, so that both the plura and the internal mammary artery may be spared any injury.

As might be expected, abdominal surgery has seen important advances. The field cannot fail to attract the average surgeon, first of all, because work upon the abdominal viscera offers boundless opportunities for successful results, while, on the other hand, the same maladies, if neglected, can give only a doleful prognosis. One of the most remarkable lesions reported was observed by Sperling, viz., carcinoma of a loop of gut which was found in the sack of a post-operative hernia. Mikulicz proposes to cure femoral hernia by raising periosteal flaps from the os pubis and sewing an upper onto the inner portion of Poupart's ligament, while a lower one is sutured to the outer portion of the ligament. This

is recommended only for large and medium size openings. Jopson found a necrotic corpus uteri in a strangulated hernia; in searching the literature for similar cases he found that the few reported presented a congenitally deformed organ, uterus bi-cornus, etc. There seems to be no end to the peculiar lesions which can be produced by severe contusion of the abdomen. Neumann reports a case in which 150 cm. of the mesentery of the ileum was torn loose as the result of such violence. The patient recovered, however, after operation (resection in two sittings). The ill effects of burying silk ligatures was strikingly shown in a case reported by Wieting and Risa. Their patient presented himself four months after an operation for hernia, with all the evidence of a tumor in the abdomen. At the second operation the omentum was found rolled up in a mass around a pus collection in the center of which was a silk ligature, applied at the time the abdomen was first opened. How much better for the patient if an absorbable ligature had been used.

A valuable experimental article upon the digestion of meat after ligation of the pancreatic ducts in dogs was recently published by Zunz and Mayer. These authors found that the loss of pancreatic secretion was soon compensated by stomach and intestinal juices. Atrophy and sclerosis of the gland with fat necrosis took place, but no glycosuria was apparent. Immediately after the procedure the animals lost weight, but quickly regained it again. Robson, an acknowledged authority on the subject, writes that the great difficulty in diagnosing diseases of the pancreas lies in the fact that the organ is so rarely alone diseased. On account of the poverty of calcium salts there is a decrease in the tendency of the blood to coagulate in these cases, hence the author considers it a part of the necessary preparation for operation that we administer calcium chloride. The diseases of the pancreas for which Robson has operated have been inflammations, injuries, cysts, stones and solid tumors. Brentano observed a most unusual injury to the abdomen, namely, a gunshot wound of the aorta, in spite of which the patient lived seven days. A few hours after the injury a laparotomy was done, but only a small hæmatoma near the right kidney found; seven days later, as the patient tried to sit up in bed, he suddenly died. The autopsy revealed a perforation of the aorta just above the origin of the renal arteries, together with an immense retro-peritoneal hæmatoma, which had burst through into the free peritoneal cavity.

The study of the fate of articles left in the abdominal cavity must always be of interest to the surgeon. Riese had occasion to do two pelvic operations on the same woman, discovering at the second there was a cyst of the meso-sigmoideum. This he removed, and was astonished to find perfectly healed in it a sponge which he had left in the abdomen at the first operation. He gives as the possible consequences of leaving such a foreign body behind, (*a*) peritonitis, (*b*) perforation of it into an intestinal coil, (*c*) extrusion of it after abscess formation, or (*d*) it may

become encysted. With the well-known progressive spirit of the Breslau clinic, Mikulicz caused experiments to be made looking to an increase of the germ-resisting powers of the peritoneum. This was in an attempt to decrease the number of infections at stomach and similar operations, since it is impossible to sterilize the visceral contents or to prevent some slight escape of the same in handling. Intra-peritoneal injection of saline or subcutaneous infusion of nucleinic acid produces a decided hyperleucocytosis, hence protects the individual from infection. On animals this was found to be an absolute fact, while control animals died in most instances. Mikulicz tried this method upon thirty-four human subjects, with a result that all passed the dangerous first week in safety; still he draws no conclusions, because he cannot say that any would have died without it. He injected under the breast 50 c. cm. of a 2 per cent. solution of nucleinic acid, and suggests that the peritoneal cavity be flushed with saline after every severe laparotomy, thus a hyperleucocytosis will be produced, in addition to the other benefits of the methods.

Payr had occasion to observe one of the most distressing imaginable complications of laparotomy, viz.: The thrombosis during operation of omental and mesenteric veins. This commenced at the periphery and proceeded toward the center without apparent cause. A common feature of these cases was inflammation of the omentum at commencement of the operation, and while every care was taken to protect it from temperature changes, as well as from other traumata, still thrombosis took place. This change in the mesenteric veins affected cases where the gut had lain in a hernial sack, hence we have some natural suggestion as to the pathology of it.

Kuester proposes an idea in the treatment of peritonitis which certainly has the charm of simplicity and directness in dealing with the chief lesion. It is to keep the patient lying on the abdomen as much as he can stand the position, instead of allowing him to recline in the usual manner. This is directly in line with long-established principles of drainage, to say the least. The nourishment of these patients, as well as those who have undergone severe stomach and intestinal operations, is a matter of no little moment, a subject which has received renewed attention from Friedrich during the past year. As formerly, he administers 40 to 100 grammes of grape sugar per day in a 4 per cent. solution hypodermically, but now improves the idea by adding to it a 7 per cent. peptone solution, a special preparation known as pepsin-peptone (Siegfried), which is manufactured by a well-known firm of German chemists, whose title is mentioned in the original article, *Transactions of the Association of German Surgeons for 1904 (Ger.)*. Friedrich has sustained patients in this manner alone for ten to fourteen days.

Perhaps the most substantial attest to the popularity and value of operating for gall-stone disease is the statement that one surgeon alone,

viz., W. J. Mayo is now engaged on his second thousand of these procedures, having passed the one thousand mark during the year just closed and what is far more important, having experienced a mortality of but 5 per cent. Of Mayo's first operations 728 operations in this class, 107 were on the common duct, as a report published last April states; this pointing in no uncertain manner to the fact that in experienced hands, this class of work has long since passed the point where we had done our duty when we simply sutured a gall-bladder to the abdominal wall and opened it a day or two later, leaving nature to take her course with the victim of any and every malady of the common duct which we had neglected or overlooked. Stirlin reports one of the eleven instances of subcutaneous rupture of common duct, in the literature; nearly all were in children and like the case mentioned were the result of being run over. For cleaning out the common duct, Kehr suggests a plan which is strikingly original; it is to open the tube behind the duodenum, then through a slit in the latter, introduce a forceps into the papilla vateri and onward until a sponge can be grasped through the slit above mentioned, when the instrument is withdrawn and the duct, so to say, mopped out. In three cases Kehr was able to wipe out stones and debris which has resisted all other attempts at removal. Ewald, who stands second to none as an authority on diseases of the digestive tract and its appendages, expresses the opinion that biliary colic is not due to a stretching or dilatation of inflamed ducts, but to the overintense activity of their musculature in an effort to overcome obstruction. Quenu considers the absolute diagnosis of stone in the common duct so difficult that he recommends an explorative operation in all cases where biliary stagnation has persisted for more than three months. He never sutures the duct for the double reason that fistulæ in it heal spontaneously in a short time, and drainage is often of greatest importance. Most interesting experiments were made by Ehrhardt to explain the clinical difference between the virulence of biliary and other forms of peritonitis. He made on cats an intraperitoneal biliary fistula, at the same time infecting the outflowing bile with virulent colon bacilli. On control animals he simply introduced the last named germs and closed the belly. The resulting peritonitis ran a much milder course in the first set of animals so the author comes to the conclusion that infected bile leads to a mild form of peritonitis because the presence of bile inhibits the germ activity, and the tendency to "walling off" is also thereby decidedly increased.

Nature's persistence in carrying out her own plan, is nowhere better shown than in her ultimate disposition of the stump of the cystic duct after removal of the gall bladder, as noted in the experiments of Haberer. He found that a dilatation of the cysticus stump took place, if the same were left long, until one could with truth speak of a new formed gall bladder; this same was always found filled with bile. If, on the

other hand, the cystic duct was ligated very close to the common duct, no such change in the stump took place. Of course, the practical deduction to be drawn from these experiments on dogs is, remove the duct completely when the gall bladder is taken out.

Our review of the surgery of the stomach cannot be commenced more fittingly than by referring to W. J. Mayo's article in the *Annals* for last March, on "Radical Operation for the Cure of Cancer of the Pyloric End of the Stomach." Of 1,500 stomach and duodenal cases 450 came to operation and proved to Mayo that conclusive laboratory diagnoses can be made in every case, only after the radical operation has become impossible; hence the extreme value of explorative operation. The presence of a tumor is no contraindication for radical operation, and the history of ulcer may be an important factor in the diagnosis. The technique by which Mayo now removes the pylorus and adjacent tissues, is beautifully illustrated and given more in detail than elsewhere obtainable. At the time of publishing this article forty-one such operations had been performed by the writer with seven deaths; none among the last eleven, however.

An American proposition, the McGraw ligature gastro-enterostomy, after experimental investigation on nine dogs at the hands of Tiefenthal, receives an enthusiastic commendation. The original technique has been decidedly improved by the German investigator, who places the knot in such a manner that it can lie only in the center and thus cause no decubitus near the line of peritoneal sutures.

Sato succeeded in producing a secondary opening between stomach and intestine by dissecting away the tissues down to the mucosa and then cauterizing the last named; peritoneum around the wound was sutured as in a McGraw ligature operation. No opening was secured when the cautery (silver nitrate) was not used. Cunningham writes interestingly of gastric tetany, stating that the prognosis is very bad; 70 per cent. to 80 per cent. under medical treatment die, and 37.5 per cent. under surgical.

An ingenious modification of the Murphy button is that used by Jaboulay; each of the segments screws into the viscera to be united so that no suture is necessary in lateral anastomosis. Its great value lies in the rapidity with which it can be applied, viz., about two minutes, so that it is possible to perform the entire operation in seven or eight minutes. Renner found, after examining a large number of lymph nodes from the vicinity of cancerous stomachs, that the external appearance of them on the operating table was no guide to the presence of metastatic disease; small ones were often found cancerous while large ones were seen to be merely inflamed. We must, then, remove all possible nodes in every case. The suprapancreatic group are most to be dreaded, since it is impossible to remove them.

Osler calls the surgeon's attention to the importance of a condition which is characterized by intestinal colics continuing for years, to which are then added an erythema, and symptoms of arthritis and nephritis. The intestinal trouble is caused by hemorrhages into the wall of the bowel and can superinduce gangrene or intussusception. Steinthal describes cases of sarcoma of small intestine free from recurrence after the lapse of three and four years and draws the conclusion that the prognosis is not nearly so bad as it has been made out. Hepperlen proposes a new method of making end-to-end anastomosis between small intestines. He uses a gelatin cylinder hardened in formol, and makes a continuous Lembert suture with two needles lying parallel, the two threads being tied after each insertion. A most curious accident attending the swallowing of a piece of bone the size of a match, was noted by Appel. He found it had perforated the wall of a loop of gut lying in a hernial sack and lay in the fat outside, surrounded by a phlegmon. The patient experienced no trouble after the removal of it. Writing upon hysterical ileus, Schwarz tells of a girl who presented all the symptoms of a complete stoppage, hence was opened but nothing found to explain the condition. For two months a chronic ileus persisted, with no stool for twenty-two days once, but the patient recovered. The author regards this as a case of simulation, since the mother and sister of the girl died of real mechanical ileus. One could hardly think life possible with less than 90 cm. of small intestines functioning, but such a case is reported by Vanverts, who implanted the jejunum into the sigmoid, for the cure of a fecal fistula. The patient has gained ten pounds since the operation and is otherwise doing well. C. H. Mayo's valuable article on cancer of the large bowel, inspired as it is by the author's immense experience, deserves a careful reading at the hands of every surgeon. He subscribes to the value of the Mikulicz principle of a "two-sitting" operation, especially in the presence of ileus, where a resection is undertaken; but he improves upon the technique already in vogue at the Breslau clinic, and sutures the colon end-to-end for three-quarters of its circumference, leaving the other fourth for a temporary fistula to be closed later. The advantage of the method is apparent.

A vast amount has been written as usual regarding appendicitis, though little that is absolutely new has appeared: possibly the most important truth that has been urged by Alapy, Spieler and other writers during the past year has been with regard to the disease in childhood. They have called our attention to the fact that the symptoms, at this time of life, are far too mild to indicate the actual severity of the anatomical condition: something which the internist especially has been slow to recognize.

The surgical treatment of cancer of the rectum is gradually approaching a position of certainty, with regard to prognosis as far as operative mortality is concerned; and since improvements in operative technique are

in a large measure responsible for this desirable progress, every new proposition looking to this end deserves consideration. Hofmann, after doing a combined abdominal and posterior removal of the rectum and anus, waives all the difficult procedures looking to the establishment of a mechanically perfect new anus, contenting himself with simply drawing down the sigmoid, placing it in the median incision just behind the normal anal opening, and allowing it to retract about one inch inside the skin edge, with iodoform gauze packed around it. Thus he gets a large granulating surface, and contractions which, together with the natural tendency of the buttocks to cover the wound, are sufficient in most instances to afford continence for hard or semi-solid feces. Of course the time saved at the operation is considerable. Schloffer has produced a strong article supporting the position of Kraske (recently), Mayo, Maunsell, Trendelenburg, and so many others, that opening of the peritoneal cavity is indispensable to an operation for high cancer of the rectum. He gives conclusive evidence that the laparotomy, besides facilitating diagnostic and technical work, adds nothing to the danger of the removal; in fact, the very high tumors which have been removed through the abdominal incision have given a lower mortality than any others.

Chaput proposes the simplest and most logical procedure which has yet appeared for the repair of those tears in the rectum that now and then complicate removal of the uterus—especially those which can not be easily sutured. He saved a patient by simply suturing the large anterior peritoneal flap to the anterior wall of the rectum above the new opening, thus making a diaphragm over the pelvis. Feces were voided through the vagina for a short time, after which the fistula closed spontaneously.

THERAPEUTICS.

IN CHARGE OF

ALBERT E. TAUSSIG, M. D.

The relative failure of the attempts to produce an antitoxin for tuberculosis has only stimulated work along other lines. Behring and his pupils, while they have failed to demonstrate the identity of the bacilli of bovine and human tuberculosis, have made some very interesting observations. By means of experiments carried out on a large scale, Behring¹ showed conclusively that cattle that had been injected once or twice intravenously with moderate quantities of human tubercle-bacilli, not only did not become tuberculous, but acquired a very high degree of immunity against bovine tuberculosis, so that subsequent inoculation with several times the usually fatal dose of bovine tubercle-bacilli failed to

produce an infection. It is very probable that the reverse is also true: that the inoculation of human beings with bovine tubercle-bacilli would produce a certain degree of immunity against human tuberculosis; but until Koch's theory that bovine tubercle-bacilli cannot produce tuberculosis in man is established beyond question, such a procedure will not be justifiable. The work of Moeller and of Friedmann with tuberculosis of cold-blooded animals is even more promising. The former² has isolated a tubercle-bacillus from the blindworm, which, when injected into the guinea-pig, produces only a brief local inflammation, followed by a very high grade of immunity against human tubercle bacilli. By experiments upon himself he has shown that his blindworm tubercle-bacillus is harmless when injected into human beings, and while the results of his experiments to prove the immunity produced in himself against human tuberculosis are, from the manner in which they were carried out, not conclusive, they promise much for the future. Friedmann³ has worked with a bacillus obtained from tuberculous turtles with similar results. The next few years will doubtless produce much valuable work along these lines.

The therapeutic use of Koch's tuberculin still finds enthusiastic advocates as well as determined opponents. On the whole, the trend of opinion seems to be that, while not as valuable as was at first hoped, the injections are harmless if properly performed in selected cases and have some curative power. Loewenstein and Rappoport⁴ have used this treatment upon a considerable number of cases at the Belzig Sanatorium with good results. They begin with injections of one-tenth of a milligram, and slowly increase the dose to one gram. The injections are given every three or four days, and in case of a reaction the interval is lengthened to a week. Of 189 cases so treated, only 85 remained under observation long enough for conclusions to be drawn as to results. Of 48 cases of pulmonary tuberculosis without ulceration, 35 were cured and the rest markedly improved. Of 16 cases of mild tuberculosis with ulceration, 11 were cured; while of 21 cases of severe tuberculous infection, 6 were cured. These results are distinctly better than those obtained at Belzig by any other method of treatment.

In von Schrotter's⁵ clinic at Vienna tuberculin is given by inhalation as a spray instead of hypodermically. Its action so administered is said to be milder, and correspondingly larger doses have to be given. The impossibility of accurate dosage would speak against the use of this method. Another variation in the mode of administering tuberculin is that used by Rosenheim and Jacob.⁶ The pharynx and larynx are cocainized, a tube is introduced into the trachea, and several cubic centimeters of a 2 per cent. cocaine solution, to which a few drops of adrenalin solution have been added, are injected into the bronchi. This abolishes the cough reflex, and the tube can be pushed down into the bronchus on the affected side. From 20 to 30 c.c. of a sterile 0.01 per cent. solution of

*

tuberculin are now injected into the bronchi of the diseased lung, and the patient is directed to inhale deeply for a few minutes. The strength of the tuberculin solution is slowly increased, avoiding any general reaction, until a concentration of 0.1 per cent. is reached. Jacob reports five patients in the second stage of pulmonary tuberculosis so treated and greatly benefited; their weight increased considerably, the bacilli disappeared from the sputum, and the physical signs showed considerable improvement. The injections are contraindicated where there is a tendency to hemoptysis. It is not likely that Rosenheim and Jacob will have many imitators, as the local use of tuberculin in this manner hardly seems logical.

Maragliano⁷ of Genoa has vaccinated a number of children against tuberculosis, the results constantly controlled by experiments on animals. The latter seem to show that the immunity obtained by his method is higher than that following the use of tuberculin. By what he calls the "progressive" technic he commences with passive and goes on to active immunization. He first injects immunizing substances obtained from the blood of immunized animals. This stage is followed by the injection of these same substances derived from the bodies of killed bacilli, a material absolutely incapable of producing infection. The third and final stage is the injection of products of the tubercle-bacilli, also harmless. The dead bodies of the bacilli are the chief factors in this vaccination, and the aim is to produce a focus of tuberculous inflammation near the surface of the body, entirely free from live tubercle-bacilli. From this focus emanate the influences which induce the antitoxic, antibacterial and agglutinating properties, the reaction of defense on the part of the organism. His method has as yet found but very limited recognition.

At a meeting of the Academie de Medicine of Paris, held November 17, 1903, Prof. Alexander Marmorek⁸ read his long expected paper, giving an account of his tuberculosis antitoxin. The article was abstracted in these columns⁹ some months ago. Marmorek believes that tuberculin does not represent the true toxin of the tubercle-bacillus, but is merely a by-product formed in improper methods of cultivation. Accordingly neither tuberculin injections nor injections of the serum of animals immunized against tuberculin can have any particular curative action. In order to produce a toxin more closely resembling that produced by the disease in the human organism, Marmorek makes use of a special culture medium upon which the growth of the tubercle-bacilli may theoretically be expected more closely to resemble their growth in the human body. The toxin so obtained is injected into horses in progressively increasing doses, and after a treatment of seven or eight months their serum possesses antitoxic powers sufficient to immunize guinea-pigs against virulent tubercle-bacilli. Marmorek's own clinical experience with his serum, while not extensive, was encouraging so far as it went. He ob-

tained the impression that the efficiency of the treatment depended rather upon the length of time the infection had existed than upon its severity, the serum being most effective in cases of acute phthisis, in which ordinarily the prognosis is worst. In surgical tuberculosis, even in Potts' disease and the like, good results were obtained. In meningitis the serum seemed ineffective.

Marmorek's communication was received rather coldly, and it was not long before adverse reports began to appear. Dieulafoy, Lucas-Champonniere, Hallopeau and others published observations declaring the serum not only useless, but occasionally harmful. Only Monod reported satisfactory results. All these opinions, however, were based on quite insufficient observation, so that other clinicians have not been prevented from giving the method a trial. H. Frey, of Davos¹⁰, was one of the first to use the serum. He reports a series of over 350 injections given to twelve patients, of which three discontinued treatment early. Of the other nine, all of which were advanced cases, mostly with cavities, two died during the treatment, two showed little or no improvement, while the other five gained in weight and improved markedly, objectively as well as subjectively. Frey believes that the general effect of the treatment is distinctly beneficial. The fever, if not due to a mixed infection, the dyspnoea and the diuresis are favorably influenced. The sputum and its contained tubercle bacilli are at first greatly increased in quantity, but soon diminish, and occasionally cease to be produced altogether. The most evident conclusion to be drawn from his report, however, is that when properly administered the serum injections are free from danger. Only such reactions (*i. e.*, urticaria, erythema, local reddening and intumescence, occasional joint pain) as may be observed after the injection of any animal serum occurred. A febrile reaction occurs only if the injections are pushed too rapidly, and is never of moment.

Latham¹¹, who has given 450 injections to thirty patients, reports similar results. All of his cases were in an advanced stage of the disease, many with cavities. In several of his cases, all of them with cavities, the disease was progressive. In most of the cases, however, there was distinct objective improvement, while in practically all of them the subjective discomfort of the patients was lessened. He comes to the conclusion that the serum possesses a specific antitoxic power. A considerable number of other observers have reported each a few cases, and on the whole come to similar results. The dosage is as follows: 5 c.c. are injected daily for four days, followed by a pause of three days. This procedure is repeated three times, whereupon the injections are discontinued for two weeks. In surgical or acute cases doses of 20 to 30 c.c. should be given, and are well borne, even by children. While the harmlessness of the serum has been established, its therapeutic value cannot be accepted until it has been tried on a much larger series of cases. So far, clinicians have hesitated to use it on any but apparently

hopeless cases, where no harm could be done; whereas, it is just in incipient cases that its value, if it has any, would be greatest. Probably its antitoxic power cannot be definitely established until we are in possession of some means for measuring the immunity, acquired and inherent, of the human organism against the tubercle bacillus.

Of all the many methods of treating tuberculosis medicinally that have been advocated of recent years, the only one that seems to be holding its own in the estimation of clinicians, especially in Germany and England, is the Hetol treatment according to Landerer. The latter, whose death last August at the age of sixty, lost to medicine one of her most faithful workers, was primarily a surgeon. His experimental researches in the field of surgical tuberculosis, led him to the conviction that our most valuable medicament in this affection is balsam of Peru. The antituberculous activity of this very complex substance was found to reside in one of its constituents, and in 1888 he published his first communication on the treatment of tuberculosis by means of the intravenous injection of cinnamyllic acid (*Zimtsaeure*). It was later found desirable to substitute for the acid the much more soluble sodium cinnamate, to which, for purposes of brevity, he gave the name Hetol (after Hedwig, his wife). At first received rather coldly, this treatment has gradually aroused greater interest. Considerable careful work has been done along this line in the past year. Thus, F. Schrage¹² reports twelve carefully observed cases treated by means of the intravenous injections of hetol. Of these, six were in the stage of incipency, and were discharged cured, both objectively and subjectively; three were somewhat further advanced, and while not freed from all signs of pulmonary involvement, felt themselves well subjectively. Three cases with cavities were rendered more comfortable, but eventually succumbed. The first case of his series is particularly striking. The patient was a girl sixteen years old, with incipient phthisis, caseous cervical glands and a nasal lupus that had obstinately resisted all treatment. Under the hetol injections the pulmonary involvement cleared up, the cervical glands healed and the lupus disappeared. Tovolgyi¹³ has had similar results, the early cases recovering completely, the more advanced cases being benefited, and occasionally recovering also. When the dose was kept under 15 mg., he never saw any ill after-effects. Heggs¹⁴ reports seven cases so treated with encouraging results. He comes to the conclusion that hetol, though not a specific, is a useful adjunct to any other mode of treatment. Brasch¹⁵, too, reports experiences with hetol, agreeing with the above. In over 6,000 injections he never observed the slightest disturbance from its use. Prym's¹⁶ results on the other hand have been much less favorable. He treated a series of twenty-two cases with intravenous hetol injections. The cases were of all sorts, mild and severe, early and late, and were treated exactly according to Landerer's directions. None of the patients recovered entirely,

and only five showed marked improvement. He observed untoward after-effects, such as chills, fever, hemoptysis in a number of cases, and therefore warns against the promiscuous use of hetol. Nevertheless, while we are far from having in hetol a specific against tuberculosis, the great majority of observers agree as to its value. Just how great the latter is, time and further observation alone will show. As regards technique, a one per cent. solution of hetol in physiological salt solution is sterilized and used for the injections. The latter are done every second day, beginning with 1 mg. and gradually increasing, never, however, exceeding 15 mg. The injections are best made directly into a vein.

In that large group of gastric disturbances characterized by a diminished secretion of HCl and of ferments, the main treatment has long been a dietetic one. Some years ago, however, Fremont vaunted the efficacy in these affections of normal gastric juice obtained from a dog's stomach. This was placed on the market under the name of *gasterine*, and sold at a very high price. Since then several French clinicians have reported excellent results with gasterine in various stomach affections, Huchard going so far as to declare that gasterine was destined to play as great a role in the treatment of disease of the stomach as digitalis in disease of the heart. No really scientific examination of its efficacy has, however, been made until this year. Heichelheim and Kramer¹⁷ studied very carefully a number of cases of achylia and hypochylia, and showed clearly that gasterine is of little or no use in these affections, having, indeed, less efficacy than the ordinary pepsin-hydrochloric acid mixture, which is inefficient enough. W. Erb¹⁸ obtained equally negative results with pig's gastric juice, put on the market under the name of *dyspeptine*. It is quite certain that the good results obtained by these irrational methods of treatment were due to the psychical effect produced by the administration of a very costly drug. The only rational medication in these cases, so far as any is indicated, consists in the administration of very large amounts of hydrochloric acid (300 to 500 c. c. decinormal HCl), not only because it calls into action any remnant of gastric ferment and increases gastric motility, but chiefly because the acid chyle on reaching the duodenum forms our best stimulant of pancreatic and intestinal secretion. Enriquez¹⁹ has modified this method of treatment in a rather ingenious manner. He believes that many cases of dyspepsia are caused not so much directly by the failure of gastric secretion as by the fact that the neutral or very faintly acid gastric contents on reaching the duodenum fail to stimulate a sufficient secretion there. He advocates the use of tartaric acid in capsules so constructed that they are not dissolved until the food reaches the duodenum. The acid set free there stimulates the secretion of the pancreatic and enteric juice, and so brings about a more perfect digestion. He has had good results with this treatment, but his statements still await confirmation.

One of the most interesting publications of the past year is Grawitz's²⁰ contribution to the etiology and treatment of pernicious anemia. He offers very convincing evidence that at least in most cases pernicious anemia is enterogenic, being due to the absorption of poisons from the intestinal tract. The rational treatment is hygienic and dietetic, and consists essentially of frequent, even daily, gastric lavage and colonic irrigation, nutrient enemata rich in proteids, and a rather strict vegetable diet. Thereby not only are the products of gastric and intestinal fermentation removed mechanically, but the gastric and intestinal contents are made as poor a culture medium for bacteria as is consistent with sufficient nutrition. Grawitz reports five cases of severe, sometimes apparently hopeless, pernicious anemia, of which three were entirely cured, one almost so, whereas the fifth, after distinct improvement, succumbed to an intercurrent tuberculous peritonitis. Whether all cases of pernicious anemia are of gastro-intestinal origin or not, the unsatisfactory results of all other methods of treating the disease makes it seem worth while to give Grawitz's method a trial in every case.

The modern methods of investigating the functional activity of the kidneys, especially by means of the determination of the freezing point of blood and urine, have thrown a flood of light upon the nature and treatment of renal disease. In advanced cases, where the kidneys fail to eliminate properly, there is a retention of solids in the blood and it is this that threatens uremia. Dropsy must be viewed as a conservative attempt on the part of the body to prevent this increasing concentration of the blood by means of the retention of water. In an elaborate research from Koranyi's clinic at Buda-Pest, Koevesi and Roth-Schulz²¹ offer additional proof that this retention of solids can best be combatted by means of diet. The most important item of the dietary is the diminution of the quantity of salt ingested. If much salt is taken the increasing concentration of the blood results either in uremia or in dropsy. Thus Torindo²³ in a recent communication reports two cases of nephritis in which a marked aggravation of the disease followed the use of saline infusions. A pretty accurate indication of the quantity of salt that may be permitted a nephritic is given by the amount of urine he secretes. As normal urine contains on the average about $\frac{1}{2}$ per cent. of salt, the patient may be allowed half as many grams as he secretes 100 c.c. of urine. Thus if he passes 1,000 c.c. of urine daily he may safely take in his food 5 gm. of salt. If there is dropsy or threatening uremia, the amount of salt ingested must be still further reduced. The efficacy of the milk diet for nephritics lies not so much in the avoidance of extractives and other substances irritating to the kidneys, as in the fact that milk is poor in salt. Widai and Jaral²² made a careful study of the effect upon a nephritic patient of a diet poor in salt. Their results indicate that such a dietary if carefully carried out is very advantageous to the patient. A milk diet is often valuable, but a dietary can be worked out

containing even less salt than milk. It is along these lines probably that the future treatment of nephritis must lie. The value of sweating in nephritis is still a much disputed question. At first sight it might seem that the abstraction from the already over concentrated blood of so much fluid might lead to still greater concentration of the blood and so to uremia. The cryoscopic observations of Strauss²⁴ and of Bendix²⁵ show that this complication need not be feared. While normal blood is not perceptibly affected by diaphoresis, the sweat of nephritics is so rich in solids that the concentration of their blood is actually reduced by this procedure and approaches more nearly to the normal. This is particularly the case if, as is usually done, large amounts of water are drunk at the same time. Both observers agree that diaphoresis is not only free from danger but of great value in threatening uremia.

While nothing of direct therapeutic importance has appeared this year regarding the treatment of diabetes, a remarkable discovery by O. Cohnheim²⁶ (the son of the great pathologist, Julius Cohnheim) promises much for the future. After v. Mering and Minkowski had shown that dogs whose pancreas had been exterminated became diabetic, it was supposed that the treatment of diabetes, analogously to that of myxedema, would consist simply in the injection or administration of pancreas substance. Unfortunately, this hope remained unfulfilled and indeed it was soon shown that the pancreas possesses no glycolytic power whatever. It was, therefore, thought either that the healthy pancreas neutralizes certain poisons that otherwise interfere with sugar-metabolism or that sugar-splitting ferments are produced elsewhere under the influence of the internal secretion of the pancreas. Cohnheim's discovery has cleared up this problem entirely. As the result of an exceedingly careful series of experiments he proved that the muscles of dogs and cats contain a sugar-splitting ferment which, however, becomes active only upon the addition of pancreatic tissue. He was able to determine the exact proportions of muscle tissue and pancreas requisite to produce the most active decomposition of sugar and, what is more, to isolate the particular ingredient of pancreatic substance concerned in this reaction. The active principal so isolated is not destroyed by boiling, is soluble in water and alcohol, but not in ether, and so belongs to the same group as the other products of internal secretion, thyroidin and adrenalin. The next step must be the isolation of the sugar-splitting ferment from muscle tissue. When that has been accomplished we shall have in our hands a rational and specific therapy for diabetes.

The observation that in general carcinosis, the spleen is usually free from metastases led Landau²⁷ to the idea that the splenic tissue might contain some substance that would interfere with the growth of cancer. The treatment of carcinomatous patients with the juices and extracts of splenic tissue showed this supposition to be false, but it was found that a substance could be extracted from the spleen of animals that had re-

markable hemostatic powers. It has been named *stagnin* and seems to act, not like adrenalin by stimulating the contraction of the vascular muscle fibres, but directly by increasing the coagulability of the blood. Its chief field would therefore seem to be capillary hemorrhage. Injected hypodermically, Landan found it efficient in the treatment of menorrhagias and metrorrhagias. It seems probable that it will be found of use in the treatment of hemoptysis, gastric and intestinal hemorrhage, hemophilia, etc., but this will have to be established by future observations. Hirsch²⁸ gives an account of its mode of preparation. Fresh horses' spleen is minced and rubbed up with twice its bulk of physiological saline solution, to which a little sodium bicarbonate has been added. The mixture, with a little chloroform to prevent decomposition, is allowed to stand in the incubator for forty-eight hours. It is then filtered and the red fluid, after having been evaporated to a quarter of its original bulk, is treated with alcohol. The precipitate, the *stagnin*, is a yellowish-brown powder, soluble in water; its aqueous solution injected into the gluteal region in doses of one or two c. c. was found to be perfectly innocuous. In fifty-nine cases of hemorrhage from the female genitalia, its hemostatic powers were found satisfactory. There were but few failures.

While the number of 4th of July accidents, followed by tetanus, was very large this year, the prophylactic use of tetanus antitoxin was never before so widespread nor apparently so successful. Once convulsions have set in, the use of antitoxin is much less apt to be followed by recovery, and indeed there is little exaggeration in the statement that a patient with convulsions is not beginning to have tetanus, he is beginning to die of it. Nevertheless, this year as in the past, a considerable number of cases, not all with a long period of incubation, are reported to have recovered, after convulsions had set in, through the use of tetanus antitoxin. Odell and Snyder²⁹ even report a case with only seven days' incubation in which well marked opisthotonos had appeared, but which nevertheless recovered after the subcutaneous injection of 220 c. c. of anti-tetanic serum. Such cases must, however, be unusual. Better results are to be expected where the antitoxin is injected into the main nerve-trunk of the injured limb, thus heading off the further progress of the poison on its way to the brain or by injecting it into the spinal canal, thus throwing it directly into the central nervous system. Among others, Rogers³⁰ and Schley³¹ report cases in which tetanus followed punctured wounds of the foot. Antitoxin was injected into the anterior crural and sciatic nerves and into the cauda equina by means of lumbar puncture. Both cases resulted in recovery. On the other hand, Wille³² reports a similar case in which, in spite of the injection of antitoxin into the spinal canal and, through a trephined opening in the skull, under the cerebral dura, death resulted.

In general, the red-light treatment of smallpox seems to be meeting

with favor, and a large number of cases have been reported in which the exclusion of white light seemed to prevent the occurrence of suppuration. Ricketts and Byles,³³ however, as the result of their observations on thirteen smallpox patients kept in rooms with red-glass windows and red hangings, deny any such virtue to red light. On the contrary, it seemed to them that the red light increased the psychical disturbances incident to the disease without affecting the occurrence of suppuration. The interference with free ventilation and with hygienic precautions that is inseparable from a careful exclusion of white light makes this mode of treatment, in their opinion, directly harmful. In what was probably his last utterance, the late Prof. Finsen,³⁴ who originated the red-light treatment, replied to these strictures. In order that the exclusion of white light may prevent suppuration, he wrote, it is essential that the patients be kept in the red chamber from the very beginning of the disease. Even a relatively short exposure to white light, especially if the exanthem be well established, suffices to produce suppuration. Nevertheless Ricketts and Byles³⁵ maintain their opposition to the treatment, declaring that not a single one of their cases showed any modification or improvement that could be ascribed to this therapeutic agent. Further experience on a large number of cases alone will make clear the truth of the matter.

The question as to the value of excluding white light during vaccination is also as yet not decided. It is certain that if the vaccination be performed in a dark room, and if later all white light be excluded from the wound, the usual inflammatory reaction will fail to appear. The fear has been that, with the non-occurrence of the inflammation, the protection against smallpox might also turn out to be insufficient. As the result of a careful series of observations, Goldman³⁶ has made it probable that this fear is ungrounded. At any rate, in none of his cases so vaccinated did a second vaccination take. Nevertheless, the question as to the protection exerted by this mode of vaccination against smallpox is even so not quite definitely decided.

Of some interest in this connection is the report by Motschan³⁷ of a case of noma treated by exposures to red light. The patient was a boy of nine years, in whom the disease had progressed to perforation of the cheek and lip. The necrotic area was exposed to the light of a sixteen candle-power incandescent lamp, covered with red glass and furnished with a conical reflector. The lamp was kept at a distance of about eight inches from the ulcerating surface and the exposure was maintained nearly continuously, day and night. The pain soon ceased, but returned whenever the lamp was temporarily taken away. In three days the disease showed marked improvement and thereafter healed without further incident.

Cruveilhier³⁸ has suggested an improved method of administering diphtheria antitoxin. He finds that the antitoxin, when injected into a

vein, acts far more rapidly and vigorously than when given hypodermically. Thus, he found that in guinea pigs, if a certain interval was allowed to elapse between the injection of the toxin and that of the antitoxin, the latter would fail to preserve life, no matter how high the dose. If, however, the antitoxin was given intravenously, the animal recovered, even if the period at which the hypodermic administration of the serum was effective had long since elapsed. His results indicate that in desperate cases, especially where the infection has existed a number of days before treatment is begun, the intravenous administration of antitoxin promises far more than the hypodermic. Of even greater interest is the announcement of Wassermann³⁹, that he has succeeded in isolating a serum bactericidal to the diphtheria-bacillus. The serum is dried in vacuo and pulverized or made into pastilles. The powder is insufflated or the pastilles sucked by the patient, so that the serum comes into direct contact with the diphtheritic surface. The serum is not to replace the antitoxin, but is to be used in combination with it. Its chief value will lie in preventing contagion. As is well known, children who have recovered from diphtheria often carry about in their throats virulent diphtheria-bacilli for weeks or months, and so form a constant menace to the community. If Wassermann's serum will prevent this its value will be great.

There is still much difference of opinion among clinicians as to the value of the various antistreptococcal sera. Shaw⁴⁰ gives an account of the results obtained with Moser's antistreptococcus serum in scarlatina. During a period of three and one-half years 1,069 cases of scarlet fever were admitted to the Anna Children's Hospital in Vienna. Of these, 228 received injections of Moser's serum. The mortality for four years before the serum treatment averaged 14.5 per cent., and for the four years since its employment only 8 per cent. During this last period the mortality in the other Viennese hospitals, where the serum was not used, averaged 13.1 per cent. The serum is harmless, but produces a febrile reaction that makes the children very uncomfortable. In puerperal septicemia, Pilcer and Eberson⁴¹ report a series of twenty-eight cases treated by means of Marmorek's antistreptococcus serum with strikingly good results. They warmly recommend its use. On the other hand, at Chrobak's⁴² clinic in Vienna the results with Marmorek's serum were almost negative, while those with Paltauf's serum, which is prepared by the use of more recent streptococcus cultures than Marmorek's, were strikingly good. Hamilton⁴³ also reports having obtained good results, both in scarlatina and in puerperal infection, by means of a streptococcus anti-serum. Menzer's serum seems to act best in articular rheumatism, and a large number of cases have been reported, not only by himself⁴⁴, but by Schmidt⁴⁵, Sinnhuber⁴⁶ and others, in which good results were obtained, both in the acute and in the chronic forms. It must for the present remain impossible to subject our own domestic antistrepto-

coccic sera to any rational or scientific test. While they are doubtlessly honestly made, the secrecy with which their manufacture is surrounded and the impossibility of learning whether they are based upon the streptococci of scarlatina, puerperal fever, rheumatic tonsillitis, etc., makes an opinion based on anything but merely empirical observation impossible. For the present, until the value of these sera, both foreign and domestic, has been more clearly established, the attitude of the medical profession toward them may well be a skeptical one.

It is now over seven years since Wright began the study of human inoculation against typhoid fever, and the results obtained can no longer be questioned. In a recent very elaborate communication⁴⁷ he states in detail the results so far obtained. The method in brief is as follows: The serum used is a bouillon culture of typhoid bacilli sterilized by heat. The individual to be immunized is given an injection of serum containing 750 to 1,000 million bacilli, and some time after a second injection containing twice as many. The injection is very painful and is followed by a sero-hemorrhagic edema of the skin about the site of puncture. The blood of inoculated individuals soon acquires a very marked bacteriolytic power for typhoid bacilli. The inoculations were performed chiefly upon soldiers about to leave for India or South Africa. Both the morbidity and mortality as regards typhoid was less than half among the men so treated than it was among non-inoculated soldiers under the same sanitary conditions. Observations made among garrisons in Egypt and in India show that the protective power of inoculations endures two or three years. While the method, on account of its painful nature, will probably not come into general use, it is, as Smith⁴⁸ points out, of undoubted practical value to—

1. Any community in which typhoid breaks out in an epidemic form.
2. Those who, like nurses, have much to do with typhoid patients.
3. Soldiers and others about to be sent to localities where typhoid is very general.

There is still much difference of opinion as to the value of Jez's anti-typhoid extract. The rationale of the extract is based upon an observation of Wassermann, that the protective substances formed in animals immunized against typhoid are not found in the blood serum, but are concentrated in certain organs, especially the spleen, thymus, bone-marrow and central nervous system. Jez accordingly took these organs from rabbits that had been strongly immunized against typhoid and made an alcohol-glycerine extract of them. This extract is given by the mouth in doses of three ounces daily. Some clinicians have obtained positive, others, notably Pometta, entirely negative results. Du Mesnil de Rochemont⁴⁹ has used the extract on a series of cases, some mild and some severe, as they came, without selection. His results were strikingly favorable and give the impression that the extract exercised a positive curative effect. A definite opinion can, however, be formed only by

trying the extract on a very much larger series of cases. Considering the ease with which the extract can be manufactured, and the simplicity and innocuousness of its administration, a more general trial is certainly to be advised.

Results with the new anti-dysenteric serum described by Gabritschewsky in the *Centralblatt f. Bakteriologie*, have been reported by Rosenthal⁵⁰. Of 157 dysentery patients treated by means of this serum only seven died. Of these, one was seventy-five years old, and three others were not seen until late in the disease. Distinct benefit was noted even in advanced cases with small pulse, cold hands and feet, paralyzed sphincter and bloody mucous dripping from the anus. The mortality among the patients treated with the serum was less than half that among those not so treated and their average stay in hospital was much shorter. The serum marks a distinct advance in our treatment of this disease. The dysenteric cases referred to are, of course, only the bacillary kind. Amœboid dysentery is not influenced.

Some three years ago Pusey reported the first cases of leucemia treated by means of exposure to x-rays. One, a case of medullary leucemia, was not benefited, but the other, one of lymphatic leucemia, was apparently cured. A year later Senn reported the first case of medullary leucemia thus treated. The patient apparently recovered completely, but not long after the publication of his report she had a relapse which proved fatal. During the past year a considerable number of cases so treated have been reported. It may be of interest to mention a few. Ahrens⁵¹ reports a case of medullary leucemia in which the number of red and white cells were about equal, and the spleen was twice the size of a man's head. After the fortieth exposure the spleen and the blood findings were normal, and the patient considered himself well. Not long after, however, he had a relapse which ran a rapid course and ended in death. Evans⁵² reports two cases of medullary leucemia so treated. In both there was subjectively a cure and objectively very great improvement. The continued pressure in the blood of considerable numbers of myelocytes, however, showed that the cure was not complete. Brown⁵³ reports a similar case, in which the splenic tumor disappeared and the patient felt entirely well. The blood findings, too, improved greatly. Cheney's⁵⁴ and Taylor's⁵⁵ cases were very similar. At the last Congress of German Naturalists and Physicians⁵⁶, Schweinburg, Krause and Soetbeer each reported a successful case. Fried⁵⁷ reports two cases, Colombo⁵⁸ three, Guilloz and Spillman⁵⁹ one, Bozzolo⁶⁰ two cases, favorably influenced by exposure to the x-rays. The most instructive report is that of Capps and Smith⁶¹. They report the results of x-ray treatment in eight cases, two of them medullary leucemia and six lymphatic. One of the latter was an acute case, which was not influenced by the treatment. The others were all greatly improved, in one of them all signs of the disease completely disappearing. Nevertheless, of these

eight cases five are now dead. These results are calculated considerably to dampen the ardor with which this mode of treating leucemia was at first welcomed. Doubtless there have been many failures to obtain improvement that have never been reported. Moreover, these remissions with apparent return to the normal are characteristic of leucemia, and have been observed not only as the result of all kinds of treatment, but especially after acute infections. Simon and Campbell⁶² report an instructive case of medullary leucemia in which an apparently perfect cure was obtained by the use of arsenic. Nevertheless, it does seem that in this dreadful disease the x-rays offer the greatest promise of temporary improvement. Whether an incipient case treated early and persistently by means of the x-rays will result in a permanent cure remains to be seen. It seems to make little difference whether a hard or soft tube is used. Long exposures, with their danger of dermatitis, do not seem to be requisite. The exposures must, however, be frequently repeated and large in number.

The value of radium in internal therapeutics is as yet very problematical. In dermatology it has apparently won a place, though as yet one subordinate to that of the Roentgen rays. Whether it has a curative effect upon cancerous tissue is still a matter of dispute. Werner and Hirschel⁶³ report that in Czerny's clinic five cases of superficial carcinoma and one of sarcoma had been treated by means of radium without result, whereas benign and tuberculous growths were favorably influenced. Lassar⁶⁴ and Pusey⁶⁵, on the other hand, consider the curative value of radium in cases of cutaneous cancer beyond dispute. The only one who has obtained undoubted results in the treatment of internal cancer by means of radium is Exner⁶⁶. By enclosing the radium in a capsule attached to the end of an esophageal bougee, he was enabled to place it in close contact with the new growth in cancerous stricture of the esophagus. The application was made about every other day, though sometimes at longer intervals, and lasted twenty to thirty minutes. In five out of six cases so treated the results were very satisfactory. The patients, some of whom had before been treated without much benefit by means of dilatation, were soon able to swallow well and gained in weight and strength. The radium had evidently caused a partial necrosis of the cancerous tissue, involving to be sure on the one hand considerable danger of perforation, but assuring on the other a relatively permanent widening of the cancerous stricture.

One of the most interesting novelties in the field of internal therapeutics is the hypodermic use of thiosinamin. In some manner that is as yet not at all clearly understood, thiosinamin so administered seems to have the power of softening and dissolving scar tissue wherever situated. During the past few years a large number of cases of Dupuytren's contracture cured by this means have been reported. Roos recommends its use in old pleuritic adhesions: Lewandowski⁶⁷ has succeeded in dis-

solving a synechia of the iris. A goodly means of success has attended its use in scars of internal viscera. Thus Hartz⁶⁸ reports a case of cicatricial stenosis at the pylorus, of twenty-eight years' standing, so treated, in which he obtained a perfect cure. Glogner⁶⁹ reports three similar cases. Two of them were not benefited by the treatment, but the improvement was marked in the third case. The patient, a man fifty-seven years old, had had the stricture for many years and showed a pronounced gastrectasis. Although the stomach did not retract entirely to its normal outline, the disappearance of all stagnation and of all subjective discomfort following the thiosinamin injections proved that the pylorus had become patent. Tabor's⁷⁰ case was one of hour glass stomach due to a contracting scar, probably following an ulcer. He declares the results of the injections to have been astounding (*verblueffend*); from week to week the outlines of the inflated stomach could be seen to approach the normal. The case resulted in complete recovery. Baumstark's⁷¹ results, on the other hand, were quite negative. In four cases of cicatricial stenosis at the pylorus, injections of thiosinamin were not followed by a trace of improvement. In two cases of pericholecystitis and perigastritis the use of thiosinamin was followed by good results, but as other therapeutic measures were not neglected, he is not inclined to ascribe much of the improvement to thiosinamin. The true value of thiosinamin in the treatment of cicatricial contractions about the stomach still remains to be decided by further observation. In cases where the patient is much weakened, and relief is urgent, it would not apparently be proper to lose valuable time in trying the thiosinamin treatment. In such cases prompt surgical interference is indicated. Where, however, the condition demands relief less urgently a trial course of thiosinamin injections is certainly to be recommended. If their power to dissolve pyloric scars is as great as some of the reports indicate, the injections may even become of diagnostic value in distinguishing between benign and malignant pyloric stenosis. As regards the technique of the injections, they may be made anywhere. Nothing is gained by injecting the drug into the neighborhood of the scar. As the least sensitive portion of the body, the back is usually chosen. The solution used may be either a 15 per cent. alcoholic solution or a 10 to 20 per cent. solution in 10 per cent. glycerin water. The former is slightly more painful, whereas the latter is considerably less stable. The injections are made two or three times weekly.

Barr⁷² has had good results in the treatment of pleuritic effusions by means of adrenalin chloride. After tapping, he injects a dram of the 1 to 1000 solution into the pleural cavity, and in his series of cases has never had any recurrence of the fluid. In ascites his results have sometimes been successful, sometimes not. In the one case of pericardial effusion so treated the patient nearly died, as the adrenalin temporarily cut off the circulation in the heart. While the patient eventually re-

covered, the adrenalin injections are certainly contraindicated in this condition.

Livingston⁷³ treats drug habits of all sorts by means of ergot. He is opposed to tapering off the drug, as it is called, and stops it once for all. Half a dram of the fluid extract of ergot injected hypodermically, two or three times daily, prevents most of the disorders following the withdrawal of the drug, probably by preventing the general relaxation, especially of the vascular muscularis that would otherwise follow. Of course the usual hygienic procedures, such as the use of laxatives, liquid diet, and the like, are not neglected. The management of the first forty-eight hours alone offers any difficulty; after that the case takes care of itself. His best results were with alcoholics, but in cases of morphine and other drug habits also, the results were good.

There is still a general tendency to treat the low blood-pressure in fevers by means of the administration of strychnine. Cabot⁷⁴ has carefully measured the blood-pressure after the administration of strychnine in thirty-one cases of typhoid, four of pneumonia and fifteen other febrile conditions, both subcutaneously and by the mouth. On the whole, the effect was nil. In twenty-four cases there was no change in the blood-pressure, in seventeen there was a fall, and in fifteen a very slight rise. In the fifty cases that received strychnine the average blood-pressure was no greater than in the eighteen that were left without stimulation. It seems clear that except in threatening heart-failure, the low blood-pressure of fevers is best left untreated.

The good effect obtained by Meyer⁷⁵ in the treatment of neuralgia and myalgia by means of hydrochinon, has been reported in a recent issue of this journal. His results were far better than those obtained by means of any of the other antipyretics, and should lead to a more general use of this drug.

In spite of the undeniable value of extract of male fern as an anthelmintic, it is by no means an ideal preparation. Its chief fault lies in the inconstancy of its composition, so that one sample will be very active, another almost inert. In order to obtain a positive effect with certainty, doses so large must be given that toxic effects sometimes result. This has led many clinicians to abandon the use of this drug altogether. Jaquet⁷⁶ has tested the anthelmintic power of the various components of male fern, one of which, an amorphous acid, forming about 5 per cent. of the average extract, has been given the name filmaron. He found that in doses of about 0.7 gm., (somewhat less for children), filmaron acted as a reliable anthelmintic, free from all toxic effects. The other constituents of male fern are far less useful.

A new era in the administration of saline laxatives may result from the researches of MacCallum⁷⁷. He found that the hypodermic injection of very small doses of the saline laxatives, such as sodium citrate or sodium sulphate, was followed by prompt purgation. Both the intestinal

peristalsis and the secretion of fluid into the lumen of the bowel were greatly stimulated. If barium chloride was used even smaller doses sufficed. His experiments were all performed on animals, so that the dose for man has not yet been worked out. If the results on human beings are found to correspond to those obtained on dogs, and there is no reason why they should not, this mode of obtaining purgation may, in many cases, prove of great value. It is of scarcely less interest to note that, at least in dogs, the hypodermic administration of small doses of calcium chloride checks intestinal peristalsis and hypersecretion very promptly, so that it forms a perfect antidote to the salines. Clinically, this observation may lead to an effective method of treating obstinate diarrhoea.

Dawson⁷⁸ finds that when hypodermoclysis is used after hemorrhage, the addition of sodium bicarbonate to the saline solution stimulates the cardiac action, thereby restoring the blood-pressure, both systolic and diastolic, to a higher level than when the saline solution alone is employed. When a solution containing 0.8 per cent. of salt and 0.25 per cent. of sodium bicarbonate is infused slowly, the beneficial action upon the blood pressure persists for a considerable time. Whether the addition to the saline solution of sodium bicarbonate is of equal value in other conditions requiring hypodermoclysis remains to be seen.

REFERENCES.

- Behring: *Therap. d. Gegenw.*, January, 1904.
- Moeller: *Zeitschr. f. Tuberc. u. Heilstaettnwesen*, No. 3, 1904.
- Friedmann: *Deutsch. med. Wochenschr.*, 1903, No. 50; *Therap. Monatsh.*, March, 1904.
- E. Loewenstein and E. Rappoport: *Deutsch. med. Wochenschr.*, No. 23, 1904.
- E. Kopralik and H. v. Schroetter: *Wiener med. Wochenschr.*, No. 22, 1904.
- Rosenheim: *Jacob. Rev. de Therap.*, 1904, No. 15.
- F. Maragliano: *Gaz. d. Osped.*, Vol. 25, No. 11.
- A. Marmorek: *Lancet*, March 26, 1904.
- Interst. *Med. J'l*, March, 1904.
- H. Frey: *Muench. med. Wochenschr.*, No. 44, 1904.
- A. Latham: *Lancet*, April 9, 1904.
- F. Schrage: *Muench. med. Wochenschr.*, No. 44, 1904.
- E. v. Tovoelgyi: *Pester med. chir. Presse*, Nos. 50 and 31, 1904.
- T. B. Heggs: *Lancet*, October 22, 1904.
- G. Brasch: *Deutsch. med. Wochenschr.*, No. 9, 1904.
- O. Prym: *Muench. med. Wochenschr.*, No. 44, 1904.
- S. Heichelheim and H. Kramer: *Muench. med. Wochenschr.*, No. 32, 1904.
- W. Erb: *Ibid.*
- E. Enriquez: *Presse Med.*, No. 14, 1904.
- E. Grawitz: *Deutsch. med. Wochenschr.*, Nos. 30 and 31, 1904.
- G. Kovesi and W. Roth-Schulz: *Berl. klin. Wochenschr.*, Nos. 24-26, 1904.
- F. Vidal and A. Javal: *Internat. Clin.*, Vol. 1, Ser. 14.
- S. Tarindo: *Presse Med.*, No. 28, 1904.
- H. Strauss: *Deutsch. med. Wochenschr.*, No. 34, 1904.
- E. Bendix: *Deutsch. med. Wochenschr.*, No. 7, 1904.
- O. Cohnheim: *Zeitschr. f. Physiol. Chem.*, No. 4, 1904.
- T. Landau: *Berl. klin. Wochenschr.*, No. 22, 1904.
- Hirsch: *Ibid.*
- T. G. Odell and C. C. Snyder: *J'l Am. Med. Assn.*, September 3, 1904.
- J. Rogers, Jr.: *Med. Rec.*, July 2, 1904.
- W. S. Schley: *Med. Rec.*, October 15, 1904.
- C. W. Wille: *J'l Am. Med. Assn.*, August 27, 1904.
- T. F. Ricketts and J. B. Byles: *Lancet*, July, 30, 1904.
- N. R. Finsen: *Lancet*, November 5, 1904.
- T. F. Ricketts and J. B. Byles: *Lancet*, November 26, 1904.
- H. Goldmann: *Wiener kl. Wochenschr.*, No. 36, 1904.
- W. O. Motschau: *Wiener klin. therap. Wochenschr.*, No. 21 and 22, 1904.
- L. Cruveilhier: *Ann. de l'Inst. Past.*, Vol. 18, No. 1.
- A. E. Wassermann: *St. L. Med. Rev.*, September 17, 1904.
- H. L. K. Shaw: *Med. News*, October 29, 1904.
- H. Pileur and M. Ebersson: *Therap. Monatsh.*, October, 1904.
- H. Peham: *Wiener med. Wochenschr.*, No. 15, 1904.
- A. G. Hamilton: *Am. J'l Obst.*, November, 1904.
- Menger: *Muench. med. Wochenschr.*, No. 33, 1904.
- A. Schmidt: *Berl. kl. Wochenschr.*, No. 49, 1903.
- Sinnhuber: *Ibid.*; *Charite Ann.*, Vol. 28.
- A. E. Wright: *Practitioner*, No. 1-3, 1904.
- F. Smith: *J'l Trop. Med.*, September 1, 1904.
- Du Mesnil de Rochemont: *Therap. Monatsh.*, January, 1904.
- L. Rosenthal: *Deutsch. med. Wochenschr.*, No. 19, 1904.

51. Ahrens: *Muench. med. Wochenschr.*, No. 24, 1904.
52. G. H. Evans: *Am. Med.*, August 13, 1904.
53. E. J. Brown: *Med.*, July, 1904.
54. W. F. Cheney: *Med. News*, November 5, 1904.
55. W. J. Taylor: *Cin. Lancet-Clinic*, May 14, 1904.
56. Schweinburg, P. Krause, Soetbeer: *Therap. d. Gegenw.*, November, 1904.
57. Fried: *Muench. med. Wochenschr.*, No. 40, 1904.
58. Colombo: *Sem. Med.*, No. 44, 1904.
59. Guilloz and Spillman: *Sem. Med.*, No. 22, 1904.
60. C. Bozzolo: *Rif. Med.*, No. 34, 1904.
61. J. A. Capps and J. F. Smith: *J'l Am. Med. Assn.*, September 24, October 1, 1904.
62. C. E. Simon and D. G. J. Campbell: *Med. News*, July 22, 1904.
63. H. Werner and G. Hirschel: *Deutsch. med. Wochenschr.*, No. 42, 1904.
64. O. Lassar: *Berl. kl. Wochenschr.*, No. 20, 1904.
65. W. A. Pusey: *J'l Am. Med. Assn.*, July 16, 1904.
66. A. Exner: *Sem. Med.*, Vol. 24, No. 9; *Wiener kl. Wochenschr.*, No. 4, 1904.
67. Lewandowski: *Therap. d. Gegenw.*, March, 1904.
68. A. Hartz: *Deutsch. med. Wochenschr.*, No. 8, 1904.
69. M. Glogner: *Therap. d. Gegenw.*, July, 1904.
70. v. Tabora: *Therap. d. Gegenw.*, February, 1904.
71. R. Baumstark: *Berl. kl. Wochenschr.*, No. 24, 1904.
72. J. Barr: *Brit. Med. J'l*, March 19, 1904.
73. A. T. Livingston: *Bost. M. and S. J'l*, February 18, 1904.
74. R. C. Cabot: *Bost. M. and S. J'l*, October 1, 1904.
75. E. Meyer: *Berl. klin. Wochenschr.*, No. 6, 1904.
76. A. Jaquet: *Therap. Monatsh.*, August, 1904.
77. MacCallum: *Am. J'l Physiol.*, No. 5, 1904.
78. P. Dawson: *Am. J'l Physiol.*, No. 6, 1904.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

Reviewing the progress of pathology and bacteriology during a year would be a thankless task if by it was meant a recapitulation of the literature come out on the subjects in this time. Owing to the facility of printing and publishing, these two branches of biologic science are suffering from the same degree of superfecundation as to literature as are other branches. The result is an immense amount of material of data and facts that are lying waste and isolated until a master mind will combine them to a harmonious picture. They mean in this sense a step towards progress, but as it is they do not change, at the present, the aspect of the science itself. The activity in this line of pathologic and bacteriologic research has been very great, and will certainly in some future time bear fruit; it would be, however, here a useless and unprofitable attempt, as far as the reader is concerned, to enter into any detail work. Besides this, the greater part of the literature of last year, there have, however, questions been advanced and discussed, and partly answered, that have in some cases remodeled opinions and teachings: and with this work the following remarks will have to deal.

I cannot enter here into a discussion of the views taken of these sciences in regard to their capacity to deepen our knowledge of life. There exists a tendency today to neglect any questions relating to the sole consideration of forms, macroscopically or microscopically visible, and to transfer the field of investigation, even in pathology, to purely chemical and physical problems. Of course it is clear that what, up to date, has been the work of the pathologist, will in the future find its illumi-

nation by the study of the processes leading to the changes of form, function and constitution. But pathology must master, first, completely the visible and demonstrable changes, before those future researches can attack successfully the problem. The bacteriologist had to study, first, the micro-organisms to the minutest details of their form and behavior before the immortal successes could be obtained in our modern views on immunity and on many general biologic problems. Pathology, general as well as special, will for centuries to come remain the basis of all deeper delving researches and inquiries. We know too well that morphologic conceptions are the products of our human brain, but they are the first to offer themselves to observation, and their suggestiveness alone has led us beyond morphology into a realm that some assert to believe is reality and truth.

A pathologic chemistry will only make great strides forward after what we call today pathology has cleared the path for the confidence in applying purely chemical and physical methods to the solution of pathologic problems. Views like those mentioned can be found in different places, and were strongly emphasized at the great congress held this year in St. Louis. Their justification cannot be denied; still the possibilities for their realization must first be created by the methods of investigation gradually developed to the present time in discovering and accounting for pathologic processes and in determining their casual relations, as far as our capacity goes. As the beginning and the end of what we call knowledge, we will always and alone have our sensory organs. Any error in the simpler conceptions will lead to geometrically enlarged mistakes. From this point of view modern pathology and bacteriology are essential and fundamental for the understanding of what we have called disease.

Of those problems, the solution of which promises important information in a great number of different directions, the origin of tumor formations is one of the first. So far we have known nothing about it, as shown by the number of theories advanced. It seems, however, that a light is beginning to dawn after the work of the last year. At least from one class of tumors, we are able with all that force of certainty that we possibly can ask for, to say that we know their origin. This refers to the splendid researches inaugurated by Marchand and set in full relief by Schlagenhauffer and Pick about the chorionepithelioma. Ordinarily occurring in the course of, and in connection with pregnancy, and even there with certainty recognized as a derivative of an abnormal development of the fetal epithelium, even as tumor retaining all of the morphologic and biologic qualities of this epithelium, it was deemed to be a tumor limited in its appearance to the female. Through Schlagenhauffer and Pick we learned that the same tumor occurs in the male, and in females before the stage of puberty. As there is no doubt but that the elements of the tumor are cells derived from fetal epithelium, in the

adult, therefore, where a transplantation of fetal tissue into the maternal organism is possible, an explanation was given. It was found by the observations that the tumor in males occurred only in formations, called teratomata or embryomata, tumors that all along were believed to develop from complexes of cells, separated off and shut out from the physiologic connections at a period so early that the innate qualities of these cells enabled them to produce in later growth the same tissues that the tissue from which they were separated produced in later life. There is no other explanation for the fact that in such tumors all of the different tissues and structures of the animal organism may be found. They cannot have taken their origin in later life after differentiation had taken place, because we have little reason to assume that differentiated cells of our tissues can ever be transformed in cells of a heterogeneous type. The cells forming such tumors, therefore, must have been eliminated from the normal relations at a period of development where each cell still had the quality to produce all types of cells. At what time this occurred, whether they arise from a polar body or from a cell after the first segmentations, a blastomere, would lead too far to discuss. Whatever the final decision about this point may be, it will not change the certainty that chorionepithelioma in males must have arisen from cells extrapolated during the fetal development. If there would be possible an absolute truth and certainty, this would be such. For this class of tumors we know where they come from.

So far, an absolute knowledge is limited to this form. Can we draw any conclusions from them to other tumor formations, especially those that practically interest us most, the malignant growths? If we consider the testicle tumors, in which chorionepithelioma is present, we are often surprised by the complete representation of all the tissues of the human body. Here the explanation is easy. But many cases of tumors occur in which this variety is limited to a few forms of tissue. The same obtains for teratomata in other regions (ovaries, etc.). Wilms has pointed out that this would not speak against a similar origin, as we can easily imagine that not all conditions would correspond to the conditions necessary for the development of each tissue. In fact, the opinion is held generally that either these tissues have not developed altogether, or that the elimination of the tumor forming cells occurred at a time where already differentiation had taken place, and, therefore, the product must correspond to the stage of differentiation of these cells. As will be seen, such a reasoning would make it easy finally to comprehend all forms of tumors under the head of embryonal detachment of cell complexes. This does not represent Cohnheim's ideas, although in them the germ for it is given; there does not take place a dissemination of those cells, but simply an extrapolation from the normal connections. They are found at the site, where experience teaches through the complexity of the growth such disturbances are liable to occur, and where,

in fact, in fetal tissues misplaced tissue elements are found, suggesting strongly the possibility that in later life they would have formed tumors. This, of course, is to a degree merely speculative, as not in a single case the direct origin, the tumor in *statu nascendi* has been observed.

That it is a very entrancing theory, and serves as a theory to all purposes, has been shown by Ribbert, who in his *Geschwulstlehre* has made it the basis for his discussion on tumors. This work has been ridiculed and belittled by men not understanding that in order to impress an idea and stimulate the demonstration of its truth by investigation, all possible consequences must be logically shown as a guide for the way the inquiries may have to go. In the first place the question is in place whether we call tumors a group of formations that in their essential characters are alike and must be classed together. The so-called independent growth, relying on the carrying host only for nutrition, means so little in view of the immense variety in character and relations of these tumors that it alone could not constitute them a homogeneous group. It would be much more plausible and logical to unite them by the conception that explains the existence of almost all of them in the way Ribbert does. His work, although not generally accepted, has, however, done so much that there has arisen a hesitating feeling while classing tumors in the rubrics given by our text-books, and there are now more pathologists than ever before that keep in their collections interrogation marks on a shelf, that means tumors which they do not right out dare to call a sarcoma or something else. It is yet, as said before, not clear whether such a conception of fetal origin will hold good for all tumors, but the general feeling is that more and more of them cannot be explained so far in another way.

And with this remark we approach the cancer problem. Its rank, theoretically and practically, among the most important subjects of pathology, bids fair to give rise to a great deal of investigation. The publications on it during the last year are very numerous, whole periodicals being devoted to it. We have now four or five special cancer commissions working on it, in itself a proof how inaccessible the problem so far has been. If we, however, ask what has been done to bring us nearer the solution of the origin of carcinomatous tumors, we will find as answer that not a step has been done forward and that the riddle is as obscure and veiled as it ever was. If the multiple attempts to lift this veil have resulted in nothing else, they have done this, to demonstrate that all the ways so far tried are unsuccessful and that we must rely on new methods and ideas to come nearer the solution. It has done another thing, to show in its entire futility the theory of a parasitic origin of carcinoma, an idea never entertained by pathology and only suggested by superficial resemblances. In looking over the numerous papers attempting to prove the existence of parasites, one is more surprised to find in the foreground always a preconceived idea than to see

how fragile and liable the arguments are brought forward to prop up this idea. It is very unfortunate that the heads of some cancer commissions are men relying on clinical observations more than on the findings of pathology. This obtains for America as well as for Europe. A good instance of this trend of ratiocination is the constant search for proof for the infectiousness of malignant tumors under natural conditions and under those of the experiment. As is well known, these experiments have resulted positive in a number of cases with us, especially by Loeb for sarcoma, and in Europe by Fensen, Michaelis, and others for a carcinoma (?) of the mouse. Such tumors can be with certainty transferred from one individual to the other, retaining their original structure and qualities. But this result has absolutely nothing to do with the origin of the tumor, it is completely in the line of that knowledge we can obtain from the transplantation of skin from one person to another; these investigations are only transplantation—experiments, and do not throw any light on the nature of the process that allows of the origin of a carcinoma. They are very interesting, but simply add an additional proof to something the truth of which was long since known.

None of these researches has a bearing on the cancer problem. In fact, the primary conceptions on even the growth of a carcinoma are by no means established generally. There is still prevailing in wide circles, even among pathologists, the idea of a, what is called, carcinomatous or sarcomatous degeneration, the belief that in the course of such a growth normal tissue cells of the same histologic character are involved in it and become tumor cells. No doubt microscopic pictures very often suggest this idea, and unless we remember under which conditions we study such a tumor we are very liable to forget that the tumor has existed for a long while, and that we have no way to judge what is primary or secondary. To this class of self-deceptions, too, belongs the method to establish from the peripheral portions of a tumor its origin. It is, again, the work of Ribbert to have shattered the justification for this, as in suitable cases it can be demonstrated that every tumor cell is a derivative of the tumor itself, that tumors grow out of themselves, but do not change other tissues to tumor tissue. We are talking of an early stage of a carcinoma, and forget that any, even the minutest carcinoma we meet with, is of shorter or longer standing, and that as yet nobody, absolutely nobody, has watched a carcinoma arise. We call a structure carcinoma when it shows the full qualities of the conception used. It does not depend upon the size to call a small tumor an early stage; the beginning stage of the tumor we would most likely not recognize, as it need not bear the characters of our conception of a carcinoma. This work of Ribbert has lately been beautifully complemented by the valuable publications of Borrmann, especially his last on the skin cancers.

Borrmann examined material of such tumors in a great variety of cases; he only paid attention to "early" stages, of the size of from 1

mm. to 1 or 2 c. In not a single case he would find the stage of the first beginning of the tumor; they always were fully characterized and typical in structure. They never showed a direct derivation from the homologous epithelium, never were in developmental contiguity with it and he never saw that this epithelium took any part in the growth and the increase of the tumor. His work is classic, and does finally and altogether away with the malignant changes of normal tissue. He has shown, before, the same course of growth for the carcinomata of the stomach, and with the evident uniformity of being epithelial formations, we may be confident that the identical results would be obtained by the investigation of tumors of other origin.

Even at its youngest, or, better, smallest stage, a carcinoma always appears sharply differentiated from the adjoining tissues, even from those that histologically are identical with it and are at the site of the growth its direct neighbors. Borrmann's researches have made one point clear, that in no case we can demonstrate the origin of a carcinoma from normally connected cells; even the minutest tumors we can discover are nowhere seen to be their product. They must originate, of course, from cells identical with them, but not in normal or physiological connection with them, cells separated and isolated during the course of the development and differentiation of the tissues. Ribbert had already suggested such an origin for many carcinomata; for others he has accepted the view of a development of epithelial cells due to inflammatory changes of chronic nature in the underlying tissue. The fact that observation seems to teach that such changes really now and then have been present before the appearance of a tumor (if these observations can be accepted as representing the true nature of the process) would confirm him. But on account of the difficulty of establishing from the *post hoc*, *propter hoc*, the casual relation, it appears much more logical to see in these changes nothing but a stimulating factor for the proliferation of the separated cells.

Of course, this part of the question is not solved by such a theory; it may be possible to find still smaller carcinomata, which show a direct derivation from the local epithelium. But one question is by Borrmann's work forever decided, there can be always only a small number of cells that become carcinomatous, and these from themselves, by multiplication, produce the whole of the tumor and of its metastases. The other and even next adjoining cells remain what they were. This demonstration is so fundamental in its importance and so far-reaching in its general consequences that we must pronounce it as the greatest advance that cancer work has made during the last year. It has done away also with a multicentricity of carcinomata of Petersen and puts in its place the formation of multiple tumors from multiple "anlagen." That this work will have an invigorating influence on the study of all

other tumors goes without saying; the applicability of the theory has already been exposed by Ribbert.

How necessary such researches are for the understanding of other formations shows in a negative way the great literature that appeared last year on different forms of enlargement of lymphatic structures. This literature is bewildering in the variety of opinions that each author expresses of the pathologic quality of the case he dealt with. It is impossible to reconcile these opinions with each other, as a fundamental basis for a criterion is not on hand. This literature is indeed a proof for our utter lack of knowledge on the normal and pathologic qualities of the lymph glands, and consequently for the impossibility of judging changes that are found, differentiating and classifying. What splenic anemia, Bantis' disease, Hodgkins' disease, lymphoma and lymphosartoma pathologically are, it would be impossible to say after reading this literature. It suffers mainly from a deficient recognition of our slight acquaintance with the conditions under which these organs arise, grow, work and become diseased. The table of hyperplasias and tumor-formations of lymph glands, published by Turek, is absolutely arbitrary and will only lead to a superficiality in the investigation of these certainly very important structures. The pathologic literature of this year leaves only the impression that our information is as yet extremely limited. The same obtains for the hemolymphglands, which by Warthin have received very careful and original study. He has called the attention to the behavior of these glands and to their changes under different pathologic conditions, but a clear and impressive picture of their status has not as yet been gained. Certainly it is not correct to provide them mainly with a hemolytic function. The evidence for this lies so far only in the copious phagocytosis of blood-corpuscles within them. What brought these corpuscles there, in what condition they arrived there, we do not know, just as little as why the spleen is filled often so suddenly with disintegrated red cells. To call a destruction of these cells within these organs the hemolytic function of these organs would only be correct if phagocytosis meant an active protection against injurious agents. It has become the fashion to accept this as the established position, while in those processes that we are really able to control and follow directly the result points to everything else than to the phagocytosis. The destruction of debris is most likely the only function, not the cellulicidal and bactericidal function, which is performed elsewhere. And in pernicious anemia we certainly would not expect it in the hemolymphglands, because it can be demonstrated that in this disease in cases with insufficient activity of the bone-marrow, these very same glands may become hematopoietic organs. We know too little as yet about them to attribute to their changes the importance that from some sides is endowed to them.

The whole subject of hematopoiesis, and especially of leucocyte form-

ation, and of the relations of the different leucocytes to each other, has not made much progress. Nor do we know much more about their relative functions. The investigations of Opie on eosinophilous cells are very interesting, but are by no means conclusive enough to prove their formation *in loco* with any degree of certainty. Ehrlich himself has lately pointed to this, and suggested in which way an explanation could be obtained in conformance with the view that they are only, and alone, bone-marrow products, and that their finding in other tissues must be due to metastatization of elements of this tissue, like we see it in other conditions. The evidence for the developmental unity of mono and polynuclear leucocytes has not increased; on the contrary, there has been shown a tendency to fall back to Ehrlich's views of the developmental difference of these elements. Only one point becomes more and more accepted, that, opposing Ehrlich's view, lymphocytes can be migratory and actively increase the cellular infiltration of tissues. Consequently Unna's teaching, to which lately Maximow also has connived, that they are able to take part in the formation of granulation tissue, is abandoned, and that seals, too, the fate of the plasmacells who are derivatives of lymphocytic elements. The attempts to show their separating off from connective tissue cells, as made by a disciple of Unna, are too clumsy to be taken into consideration.

Of other pathologic problems only a few words may be devoted to Opie's well-known discovery of lesions of the Langerhans Islands in diabetes. His work has excited a hot discussion pro and contra. A great number of investigations have been published, the last and at the same time the most objective one by Sanerbeck. Although many points speak against a specificity of the lesions, the general result has been that they are almost only found in diabetes. On the other side, these lesions are not equally extensive in all cases, nor do they affect the islands throughout the organ or always in the same degree. The numbers of islands in the normal organ vary, besides, greatly, so that many of the latter equal those of diabetes in the total number and apparently, therefore, in their functional capacity. Only a comparison of cases with regard to the clinical aspect will establish whether the degree of the pancreatic lesions found in each case would pathologically correspond to it. Hanseemann's assertions that the alleged importance of these lesions is imaginary is certainly premature.

The discussion and investigation of tuberculosis questions has been as active as in the previous year, although less passionate. It may be said that the two main points—the pathogenesis and specific etiology of the infection—appear to be settled for most observers. For certain reasons, uniformity of opinion has not been reached yet. As to the pathogenesis, Behring's pronunciamientos have been the cause of a great number of pathologic and statistical materials to be collected that absolutely speak against the correctness of this author's views. The old

teaching of inhalation tuberculosis has gained the victory again in place of the enthusiasm for the infantile infection. It may be here sufficient to say that at the present time there is no need to leave the basis on which so far our knowledge of tuberculous infection has rested. Perhaps it has been a little too one-sided and too mechanical; still there is no reason to abandon it, as for the great majority of cases it certainly accounts fully. As to etiology, of course, only the fight about the identity of human and bovine bacilli can be meant. Behring's positive assertions for a while made such an impression that judgment had to stop. Although to the critical observer even in 1903 the decision pro or contra was not doubtful, the general belief certainly has been for some time that Koch's views on the difference, and especially the pathogenic difference, of these bacilli has not been correct. It was only due to the arbitrary combination of the theory of infantile infection and the infectiosity of cow's milk, which at the first glance appeared so convincing, that Behring succeeded to lead medicine and laity astray. It was due, too, to the publication of isolated and vagrary experiments published, that from single cases general conclusions were made. It was due to the criticlessness with which human tuberculosis was in certain cases on the basis of a history of infection with bovine bacilli pronounced as of bovine origin. This in spite of the fact that before this pronouncement was made, Koch himself had explicitly shown how impossible it is to draw any binding inferences from such cases. Meanwhile, the work on a firm basis went on, and the year 1904 has brought results that, without the possibility of contradiction, do away with the horror of bovine tuberculosis. The extensive experiments made in Berlin (Kossel and others) are alone so plain and uniform that they exclude any doubt. Even in our country the trend of opinion begins to change, and we are glad to have heard Smith give public expression to this. Aside from the experimental work that at the best, for clear reasons, must act one-sidedly, the accumulation of evidence in other directions has been enormous. One of the most convincing data is the demonstration of the tuberculosis condition in Japan, before and after the contact with western civilization, published almost simultaneously, but independently, by Japanese and German authors. There was no cattle in Japan before the European control; milk and beef were unknown. Even to-day the use of both materials is limited to an astoundingly small minority of the population. In fact, nursing with cow's milk is even to-day almost unknown. Nevertheless, the rate of tuberculosis mortality was about the same before and after the control, and a very curious point, but weighty in connection with these questions, is the fact that puerile tuberculosis in Japan exceeds by far the same in many European countries. All this without cow's milk.

Another important contribution is the collection of data referring to the way in which patients in hospitals and sanatoria were nursed during

the first year of their life. It was found that in some 6,000 cases only a minority received cow's milk; that the majority were breast-fed. This shows definitely that the infection was not acquired through cow's milk; was not acquired during the first years of life. As there is no *a priori* reason to assume a difference in the way of infection of the breast-milk and cow-milk individuals, the cow's milk cannot certainly have been the base of it, and the only source can have been the contact with tuberculous individuals. This also accounts for the high infant mortality in Japan, with its crowded and filthy houses, as it accounts in the same way for the terrific rate of tuberculosis in Greenland, where no cattle exist.

The theoretic considerations that were opposed to Behring's view could be shaped and formed, perhaps, to conform with them. This is impossible with these experiences, especially in view of the outspoken directness of Behring. They form a beautiful and complete confirmation of the idea with which Koch started his work on the extermination of tuberculosis: only the human tuberculous patient can disseminate the disease, and the only (perhaps we might connivingly say the main) thing is to prevent him from doing so. This is and will remain the essence of our practical dealings with tuberculosis as long as no direct means of protection have been devised. We have not heard again about Behring's antitoxic milk. However, it seems more than ever possible now to arrive at a certain and innocuous method of vaccination. The publications about the successful and absolute vaccination against tuberculosis of the most susceptible animal, the guinea-pig, that appeared lately, make it only a matter of time before such a method will be applied with the same safety as vaccinia to the human race.

A few words may be said here on the ideas coming into the foreground during the last year, and dealing with the modern aspect of exterminating infectious diseases altogether. After all other attempts had failed, and after we learned the reason why they must (at least now and then) fail, Koch's conception has come to the front, asserting that only the infected individual can cause infection. According to the way in which the infectious agent is liberated from his system, the methods to protect others must vary; but there is only one leading principle in all of them—its destruction as soon as it leaves the patient or while it is still in his body. While it will be impossible to do away with infectious diseases by general sanitary measures, it becomes easily possible when the single patient is kept during the time he is a carrier of the infectious agent in a way that he cannot transfer it to his surroundings. This simple and logical principle will have to battle against a great deal of sentiment, but if it comes to the problem of the protection of the population, the question will simply be: Shall we ruin it financially by measures of which we know that they cannot be reliable, or shall we force on the individual patient a personal restriction while he is a

danger to the community? Of course, for a long time yet, sentiment will be the superior, and so for a long time yet we will have infectious diseases.

As to the single infectious diseases nothing startlingly new has developed as far as their etiology and pathology is concerned. The sanguine expectations excited before by the study of the dysentery bacillus have not been fulfilled. It is, on the contrary, today very probable that dysentery is only a name for a variety of diseases etiologically different. This is certain for some forms by this time, and will most likely be proven for a still greater number. So far dysentery has only a bacteriologic interest; practically all attempts to utilize our knowledge for treatment, etc., have failed, as they must. If the bacillus is the etiologic agent in the disease the hope to obtain a curative serum has been from the beginning futile from what we know about the biologic qualities of the organism. That men of high standing, and believed to be familiar with these facts, could lend themselves to arouse hope in this line is surprising and at the same time regrettable. They cannot even claim a partial success that might be adduced from the reports on successfully injected cases of dysentery. Bacteriology has nothing to do with these attempts, and has never attempted them.

The subject of diphtheria has for a long time appeared as one of the most completely explored branches of the infectious diseases. Very lately, however, voices have become loud alleging that not everything is so simple, and that with the discovery of antitoxin not everything is done. There have appeared a number of cases of clinically and assumedly bacteriologically typical diphtheria that in spite of early treatment did not respond, although only a few of them resulted fatally. A careful study of the culture made from these cases revealed the fact that the supposed diphtheria bacillus was a so-called pseudo-diphtheria bacillus, resembling morphologically the first, but biologically very different. His toxin was different from that of the true diphtheria bacillus and not neutralized by the antitoxin produced by the latter. Clinically these bacilli suggest strongly diphtheria, and the antitoxin is inculpatated for ineffectiveness. Of the authors that have worked on this subject, Alice Hamilton must be named in the first line. It offers a wide outlook for further investigations purely bacteriological, but also clinical and diagnostic. Whether it will in practice influence our dealing with the complex of symptoms called diphtheria we cannot say now.

Altogether new is the introduction of another protozoic disease into the catalogue of human diseases, that of trypanosomiasis, blood infections with a small flagellate that, most likely by toxic effects, almost invariably leads to death. Similar diseases were known for a number of years among animals causing immense losses and barring cultivation of large areas. Man seemed to be immune against these parasites until, especially by Castellani, the discovery was made of the presence of try-

panosomes in persons suffering from sleeping sickness. His results were confirmed and at the same time similar parasites found in the blood and the spleen of persons suffering from forms of so-called tropical fever, tropical ulcer, etc. The last year has brought a great number of contributions to the subject and made of it a new branch of parasitology that is assiduously worked on all over the world. The transmission of the disease is certainly done by insects, although no definite conclusions have been reached as yet, which has been done for one or two of the related animal diseases. Together with malaria and yellow fever trypanosomiasis will enter into the range of the most interesting and also important diseases.

Protozoic diseases lead the thought to the exanthemata, and in the first place to variola. Councilman's elegant work stands as yet unconfirmed, although the study of his and his colleagues' publications is so suggestive that it has taken a good deal of courage to ask for further evidence. Still this question must be put, and as long as there can be a doubt about the identity of the organisms described, a definite answer must be expected. Even with the working out of what appears a cycle of development no sufficient proof can be given as shown by the latest publications of Ewing on vaccinia. Further, more convincing corroboration is absolutely necessary before we can call variola a protozoic disease. The same obtains for scarlet fever and the formations described by Mallory. The interpretation given by Calkins on Councilman's organisms is made from an analogy of forms, but not from a knowledge of the life of these organisms. It is in agreement with his inclination to call certain formations in cancer cells parasites. Only one thing seems to crystallize out from all of this work undertaken with the view of discovering parasites, that is, that certain toxic effects may be followed by almost specific changes in the protoplasm and nuclei of epithelial cells; it is certain that the parasites of variola have not been found in that definiteness and variety in other conditions. Ewing has succeeded in producing them in the skin of a frog and the pictures represent almost all of the stages of the extra and intranuclear stages. Here, of course, an infection is excluded and we see only the effect of an intoxication.

Protozoa have been playing a great part also in another infectious disease, in hydrophobia. Negri, of Italy, has found what he believes to be protozoa in the nerve cells of certain portions of the nervous system of animals and men succumbing to hydrophobia. They are round or oval bodies, mostly acidophile, but are seen mainly in the cells of the hippocampus major, the cerebellum and in the medulla, although they occur in other areas also. Their size varies considerably and the author believes that he has seen stages of a definite cycle and even evidence of ameboid movement. As to both of these observations experience teaches how unreliable they are; it is, however, certain that these bodies

(Negri's bodies) are always present in hydrophobia and have not been found in other similar diseases. They are certainly only manifestations of degenerative changes of the protoplasm that in hydrophobia manifest themselves, as it seems, especially in this shape. The occurrence of these bodies is of a certain diagnostic importance, as they certainly strongly suggest death from rabies. They have the advantage that they are easily demonstrated even in material unfit for finer histologic examinations.

The greatest part of bacteriologic work during the last year was again devoted to the investigation of the immunity questions, that branch of biologic science that by Ehrlich has been extended to a science of general biologic importance. The material accumulated is so rich and diversified that it would be impossible to do it justice by a short review. The main trend, however, that the studies took and the conclusions at which they arrived may be briefly represented here. It was directed by the attempts made by physical chemistry to class the processes going on in the reactions of immunity bodies on each other, for instance the neutralization of toxin by antitoxin, not as reactions of substances of strong chemical affinity to each other, but as those obtaining for instance for weak acids and bases. That means that the combination of the two did not occur under all circumstances in the same proportions, that it depended upon the concentration in the solution of these substances. In other words, the attempts intended to subject the immunity reactions to the law of Gulberg-Wage, and to consider the combination products as dissociable substances. Arrhenius and Madsen especially have constructed curves of the union of these substances perfectly resembling the curves obtained by the saturation of boric acid with ammonia. If this would be true, Ehrlich's theory would be in great danger of losing its strictly chemical character, and many experimentally established facts, we would easily explain after Ehrlich, would remain obscure. By ingenious and exceedingly tedious work Ehrlich had recognized the complexity of the diphtheria toxin, it was the basis of the grand building erected on it. He established, by taking the neutralizing dose of antitoxin as a standard, that different toxins varied in potency. He found the laws of this variation, and built upon them his methods for the determination of the efficacy of antitoxic sera. As said above, Arrhenius and Madsen based on experiments similar to those of Ehrlich believed to have found that the varying toxicity was due to the degree of dissociation occurring in more or less diluted solution. Without careful examination the picture given by them was so entrancing that at one stroke the whole of the immunity processes appeared fully accessible to pure physico-chemical methods. Theoretically, however, the justification of such a method was to be considered; the chemical nature of immunity products is unknown, from their physical properties we must believe that they are colloidal substances. On the other side, the cal-

culations of the Swedish authors were undertaken with the assumption that they were well defined chemical substances for which alone the law mentioned can obtain. The latter does not hold good for colloidal substances, and therefore any calculations made on this assumption were from the beginning theoretically wrong. As beguiling as the prospect would be, to look at the immense complexity of immunity reactions as easily controlled physico-chemical problems, the theoretic fundament for it does not exist. Besides, there were known even before this work was published, phenomena that impossibly could be reconciled with the existence of dissociability in those processes. The work of these authors has, furthermore, had the merit of having stimulated an endless series of investigations during this year that finally and entirely did away with the assumption of dissociability and conclusively proved that anti-toxin and toxin and amboceptor and receptor form firm combinations which it is impossible to dissociate by changing the degree of concentration. To refer to this work in detail would fill a small book, and cannot be done here. It must be sufficient to say that by the work of Ehrlich, Morgenroth, Dungern and many others, among them Madsen himself, evidence has been brought together of such conclusiveness that the discussion has been closed. It appeared as a spite of fate that after this closure a publication came out, written by Calcar, that made all this work unnecessary, as by a simple experiment it showed that in diphtheria toxin the several constituents so far only recognizable by their antitoxin-binding capacity in the infected animal could be easily isolated by filtration through a semi-permeable membrane. Toxin and toxoid do not exist only in imagination; they are today substances obtainable isolated.

This result of the long fight has, of course, resulted, for the present, in a complete confirmation of the correctness of the direction that the investigation on the basis of the side-chain-theory has taken. The number of remarkable and astonishing facts that have been added to the great picture is enormous. The thing most remarkable is that, so far, not a single fact is known that does not snugly fit in the result of Ehrlich's life-work.

And this might end my review, if it would not appear suitable to bring an appendix tending to show that all of this work finally results also in practical consequences. I refer to the necessity of being fully familiar with these theoretic investigations before applying them in certain directions for serumtherapeutic purposes. The limits, of course, that for them obtain have been recognized long since; the hopes for the production of curative sera are very narrow. They have become still narrower by the exact understanding of the action of these sera. We now know that only antitoxic sera can be of benefit, that in bactericidal sera we have a knife with two blades, that as well may cut the bacillus as the organism to be freed from it. We now know that many intoxications are not caused by a toxin excreted by the bacteria, but by their

disintegration within the body. Our bactericidal sera destroy the bacteria and offer them to the tissues for resorption of the disintegrated material. The animal injected with one fatal dose of a pathogenic bacterium, and at the same time given the corresponding dose of the bactericidal serum, will survive. If we multiply this dose over a certain degree, and even administer more serum than is necessary to destroy this increased number of bacteria, the animal will unavoidably die. The reason lies in the fact that the destruction of bacteria means a toxic effect on the organism in which they are destroyed. This phenomenon is designated as endotoxin-poisoning. The single fatal dose does not produce enough endotoxin to kill our animal, perhaps even the tenfold amount is not sufficient, but a limit comes where the endotoxins represent the fatal dose, and we have no means to counteract them. Wolff has lately exemplified this phenomenon by numerous experiments. It is of paramount importance for the practical use of these sera. To cure such an established infection by a serum is impossible; it may only be used up to a time where the number of bacteria have not multiplied within an organism to the degree that their destruction would result in the formation of the fatal dose of endotoxins. With this remark in view, all the attempts at serum treatment in typhoid, cholera, dysentery, etc., ought to be regarded.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

Among the most discussed subjects of the obstetrical literature of the year 1904 we find the question of the comparative value of Bossi's dilator and Duehrssen's vaginal Cesarean section in forced delivery. If, in an early stage of labor, a rapid dilatation of the cervix becomes necessary, we have at our disposal the following means: first, dilatation with the fingers, which is tiring and difficult for the operator and ineffective if the cervix is rigid to a pathologic degree; second, the use of the colpeurynter, undoubtedly a very useful instrument if it were not for the fact that it breaks easily and, therefore, is thoroughly unreliable; third, cervical incision, especially in the form which is now generally known as Duehrssen's vaginal Cesarean section, an operation which should only be performed in a hospital or well equipped private home and needs a good deal of trained assistance; and, finally, fourth, we can resort to rapid dilatation by means of instruments. It is obvious from this consideration that there is a good field for instruments,

such as the Bossi dilator, if they could be used without danger to the patient.

The first enthusiasm over Bossi's instrument, which, after all, is nothing but a modification of similar instruments in use long before Bossi, begins to vanish. We find in the literature of the past year numerous publications which record more or less satisfactory results with this instrument. The papers of Pollak (M. f. G.), Ehrlich (A. f. G. 73), Hohl (A. f. G. 71), are based upon personal experience with a great number of cases. Other papers by A. Parmenide Ricci (An. of G.), Sam. Gache (An. de G.), Zinke (A. J. o. O.), Ballantyne (B. J. o. O.), take the question up in a more critical way. All these writers emphasize the advantages of this form of quick instrumental dilatation, but they all dwell at length upon the danger of laceration. The Bossi dilator certainly does not comply with the one demand that must be made for such instruments, namely, that they should not harm the patient. There are numerous cases on record where severe hemorrhages followed the use of the instrument caused by tears in the parametrian tissue. In considering the dangers of the Bossi instrument, Bardeleben (A. f. G. 73) calls attention to the frequency with which, in patients in whom the Bossi instrument has been used, later deep lacerations of the cervix are found. Considering the frequency (75 per cent.) with which such lacerations lead to gynecological troubles, the author finds one more cause to warn against the use of this instrument. R. de Seigneux (B. J. o. O.) describes a new dilator, based upon the Bossi principle, which he used to good advantage. It may be interesting to note in this connection that Heller (A. f. G. 73) used Seigneux's instrument in inducing premature labor in cases of contracted pelvis, and considers the instrumental method preferable to the slower procedures with bougie or colpeurynter.

The possibility of producing deep and dangerous lacerations of the cervix by means of Bossi's, or similar instruments, necessarily led to a discussion of the possible advantage of cutting the cervix instead of risking the tear. The lateral incisions into the cervix, as first recommended, by most writers are objected to on account of the not uncommon experience that during delivery these cuts may continue to tear and injure large blood vessels in the parametrium. Hofmeier (M. M. W.) describes serious consequences of such deep lateral incisions in subsequent confinements caused by the scars, which prevent a proper dilatation of the cervix during labor.

The median incisions are rapidly gaining in favor, especially in the form in which they were first propagated by Duehrssen. Duehrssen's vaginal Cesarean section is an operation which has come to stay. It is today the recognized operation in malignant diseases of the cervix. It rivals with the Bossi dilator in all forms of forced delivery as necessitated by accidental hemorrhage, premature detachment of the placenta, etc. It is the operation of choice if the os is extremely rigid, because in

these cases the soft colpeurynter is ineffective, the Bossi dilator dangerous. Of greatest practical interest and most discussed we find the problem of rapid delivery by means of vaginal Cesarean section in eclampsia. As well known, all the common methods of accouchment force yielded in eclampsia so unsatisfactory results that for some time the classical, that is, the abdominal Cesarean section has been advocated and performed. It now seems to be the general consensus of opinion that Duehrssen's vaginal Cesarean section is the method of choice in dealing with severer cases of eclampsia. It is safe to say that this operation, at least as far as eclampsia is concerned, has passed the stage of experimentation. In premature labor it may be sufficient to split the anterior lip; in full term pregnancy both the anterior and posterior should be divided and a perineal incision made whenever the vagina is narrow or rigid. The fetus is removed either by means of the forceps or preferably by bimanual version. In a very exhaustive paper on eclampsia (97 pages) Zweifel (A. f. G. 72), supports vaginal Cesarean section, and so do Zinke (A. J. o. O.), Bacon (A. J. o. O.), Carstens (A. J. o. O.), J. M. Munroe Kerr (B. J. o. O.), Hammerschlag (Zb. f. G.), Ahlfeld (Zb. f. G.), etc. Duehrssen (Zb. f. G.) reports a case in which he, in the sixth month of pregnancy, performed this operation on account of a severe hemorrhage from placenta previa. Such a procedure can hardly be recommended for extensive use. We can understand that the inventor of this method attempts to widen the field of usefulness of his operation, but we hope that he will not find many followers. How dangerous such suggestions are is well illustrated in the history of the classical Cesarean section for placenta previa. It seems that this chapter is now definitely closed, and those who still have some doubts about the impropriety of treating placenta previa by means of abdominal Cesarean section, are referred to a paper of R. W. Holmes (A. J. o. O. Dec.) read before the Chicago Gynecological Society and the subsequent discussion.

Enthusiastic advocates of the classical Cesarean section, when endeavoring to increase the number of relative indications for this operation, never fail to quote Kroenig's claim that induction of premature labor on account of contracted pelvis is unjustifiable, because of the high fetal mortality attending such a procedure, and Zweifel's assertion, that of 100 premature babies not one is alive at the end of the first year. It is always a difficult task to eradicate erroneous statements if made by recognized authorities with a certain positiveness. We have to expect to meet with the two statements mentioned here for some time to come, although we find in the literature of the past year four papers which convincingly demonstrate that both Kroenig's and Zweifel's claims are unwarranted. Lorey (A. f. G. 71), records carefully the fate of 100 cases of premature induction of labor for contracted pelvis. The fetal mortality in this 100 cases was 40 per cent., certainly a high figure, but these same women had previously given birth to 207 children, with

an immediate fetal mortality of 78 per cent. These prematurely delivered babies showed during the first year a mortality of only 21.5 per cent., while according to the health statistics of the city of Halle, where these investigations have been made, the average infant mortality for the city is 24 per cent. for the first year of life. Almost identical are the results of researches made by Kroemer (M. f. G. 20), Hunziker (H. B. 9) and Richard C. Norris (A. J. o. O.), the latter giving expression to his personal opinion in the question by saying: "Caesarean section would have occasioned greater notoriety but not greater satisfaction to an earnest student of practical obstetrics."

It is probably better to attack wrong and dangerous teachings at once. The past year offers two good examples for this mode of procedure. We refer to a number of papers antagonizing articles of Hegar and Zweifel. The literature of the year 1904 contains numerous repudiations of Hegar's claim (M. M. W., 1903), that the repair of the perineum immediately after labor is an almost useless procedure. Probably the best answer to Hegar's attempt of overthrowing a time-honored principle of practical obstetrics is given by G. Vogel (M. M. W.). The great importance and advantage of immediate repair of the pelvic floor was duly emphasized in a symposium on this question at the last meeting of the American Gynecological Society in Boston. At this occasion Lapthorne Smith read a paper in which he goes so far as to advise to put the sutures in before the rupture really has occurred, namely, just before the head begins to press down upon the perineum. Of course such a procedure can hardly be endorsed, because it seems to be based upon the absolutely wrong assumption that we never can prevent a laceration.

Zweifel (Zb. f. G.) thinks that he can noticeably reduce the danger of a puerperal infection by carefully removing, one hour after the expulsion of the placenta, all blood coagula that have formed in the vagina. The author's intention is to transplant into obstetrics the principle of modern surgery: to prevent infection by exact control of hemorrhage. This suggestion of Zweifel was widely discussed and decidedly repudiated. A number of these articles can be found in the Zb. f. G. (Bockelmann, Mueller). In a very readable article Sigwart (Zb. f. G.) criticises strongly the modern tendency of preventing puerperal sepsis by making use of a very undesirable polypragmasia.

New light is thrown upon the etiology of puerperal infection by the investigations of Bumm and Sigwart (H. B., 8) into the relation between streptococci and puerperal fever. They found in 75 per cent. of all women during pregnancy and the puerperal state arob streptococci in the vaginal discharge. They feel justified in assuming that if more suitable culture media were known, most probably streptococci could be found in all pregnant women. Why these streptococci only in a few cases show a deleterious action; whether the presence of another agent

is necessary, which prepares the soil for the further growth of streptococci; whether the virulence of the streptococci may be so variable that they, at times, may be harmless saprophites, at other times most pernicious germs, are questions that will have to be answered. With great satisfaction Ahlfeld (Zb. f. G.) accepts the report of Bumm's researches. He finds in them a most valuable support for his view, which he had to defend against many a vigorous attack, that auto-infection, especially during a tedious labor, is not uncommon and unavoidable.

This fact is also of interest from a medico-legal point of view (extensively discussed by Koestlin in M. f. G., 19), because in some European countries malpractice suits in cases of puerperal infection seem to be quite common.

Striking is the number of papers which are devoted to a consideration of the serum treatment of puerperal infection.

N. Raw (B. J. o. O.) employed 20 c.c. of the Marmorek serum twice a day in cases in which streptococci were found in the lochial secretion. He considers serum a most valuable addition to the known therapeutics in combating puerperal infection. Good results are reported by A. G. Hamilton (A. J. o. O.), and in a very carefully prepared paper by Walther (Zs. f. G. 51), who recommends the use of the serum, if a thorough evacuation of the uterine cavity is not followed by a prompt fall in the temperature. Peham (A. f. G. 74) records very encouraging results from Chrobak's clinic in Vienna with an antistreptococcus serum specially prepared by Paltauf. The success seemed to be dependent upon an early use of the serum in a sufficient quantity (100 c.c. pro injection).

A very exhaustive study of the therapeutics of puerperal infection is presented by Sitsinsky (M. f. G. 20). The writer recommends the following mode of treatment for septic processes in the interior of the puerperal uterus: 1, Small uterine douche (about 1000 c.c.) with bichloride solution (1:1000); 2, free douche with hot (50 °C.) sterilized water or boric acid solution; 3, drying out of the uterine cavity with gauze; 4, douche with 90 per cent. ethyl-alcohol. About 50 to 100 c.c. are kept for a few minutes in the uterine cavity by compressing the external os; 5, finally, drainage of uterus by introducing a strip of iodoform gauze. As Professor Ott, in a few introductory remarks, states this method was successfully applied in 210 cases of the Imperial Gynecological Institute of St. Petersburg.

In a very instructive article on pelvimetry, L. von Bylicki (M. f. G. 20) speaks plain truth about wrong ideas on the value and importance of pelvimetry.

There cannot be any doubt that the greater part of what we read in text-books of obstetrics on pelvimetry is untrue and exaggerated. It is hypocrisy to impress the student with the immense practical importance of exact measurements of the pelvis, because everybody, who is

familiar with the various methods of pelvimetry, knows that almost all of them are absolutely unfit for determining pelvic diameters with an exactness which could justify to apply the term "measuring" to such inaccurate "estimating." To be sure, there are one or two modes of pelvimetry which work with a tolerable degree of reliability, but they are too complicated for an extensive use. Nevertheless pelvimetry has its great practical advantages, namely, in ascertaining abnormal shapes of the pelvis, but not in determining the exact length of pelvic diameters, a knowledge of which will always be of limited practical value as long as we have no means of measuring the head of the unborn child. The great value, especially of external pelvimetry in the diagnosis of abnormally-shaped pelvises, is, in our opinion, not properly emphasized. We should begin to repudiate writers who give us exact figures of the length of certain pelvic diameters as indicating or contra-indicating certain obstetric operations. In too many text-books and articles we meet with figures, accurate to a quarter of one centimeter, from which far-reaching conclusions are drawn, and if we investigate a little more carefully into the source of this impressively exact length of the true conjugate, we may find that it has been gained by subtracting nine centimeters from the measured length of the external conjugate, sometimes, the writer informs us, that in this particular case he has subtracted 10 cm. on account of the stoutness of the patient.

Bylieki describes a new instrument for ascertaining the length of certain pelvic diameters. His method certainly is not complicated, but it is not even theoretically exact. Some older methods have at least this advantage.

The etiology of eclampsia is still under discussion. Berkeley (B. J. o. O.) gives a good review of recent literature on this subject, but without drawing any positive conclusions. Veit's theory that chorionic tissue, carried into the maternal system, is the source of all the toxemic manifestations of pregnancy (Zb. f. G.) is decidedly gaining in favor. Probably the most interesting and important casuistic report in the obstetrical literature of the past year is one of Hitschmann (Zb. f. G.). A patient developed in the fifth month of pregnancy eclampsia, and expelled a hydatiform mole without any trace of a fetus. This observation positively sets aside the one strong argument of the defenders of the fetal theory in the etiology of eclampsia, that eclampsia never develops in the absence of a fetus. Hitschmann's observation must be regarded as the strongest proof that ever has been furnished in support of that group of theories which consider the ovisac the source of those toxic substances that are responsible for eclamptic seizures. Hitschmann does, however, not believe that his case could be accepted as a positive proof for the theory of Veit, because, in his opinion, the formation of syneytiolysins could never be brought in harmony with the fact that autolysins do not develop under normal physiological conditions. Hitsch-

mann considers his case unique. We came accidentally across a similar case reported by Raineri (*Gaz. degli. Osped. e della. clin. rev. B. J. o. O.*). Here eclampsia developed nine days after the expulsion of a hydatiform mole in the third month of pregnancy.

The question of heredity in the etiology of eclampsia, which was often discussed by older writers, was recently brought up again by L. Bagot (*L'Anjou Medical*), who observed eclampsia in a patient whose mother and sister were suffering from the same disease at the time of their respective first deliveries. The writer does not attempt to decide whether in such cases a peculiar irritability of the central nervous system or a functional insufficiency of one of the eliminating organs is inherited.

Two new methods have to be recorded in the treatment of eclampsia, namely: Lumbar puncture and decapsulation of the kidney.

Concerning lumbar puncture, the interesting fact must be stated that this method was almost simultaneously recommended in America, England and Germany. R. M. Wilson (*J. A. M. A.*), in an article dealing with the pathogenesis of uremia and eclampsia, expresses the opinion that intracranial pressure plays an important role in the production of the uremic and eclamptic condition, and that by lumbar puncture, at least temporarily, some of the symptoms could be relieved. T. A. Helme (*Brit. Med. Jour.*) holds an almost identical opinion. Kroenig (*Zb. f. G.*) placed his theory on firmer grounds by really measuring the pressure of the cerebro-spinal fluid in the subarachnoidal space during eclamptic seizures. He found it considerably increased, and, therefore, felt justified in draining, by means of puncture, in several cases from 37 to 47 c. c. The operation did not show any distinct immediate effect. All the patients, however, recovered. Nevertheless, Kroenig is very guarded in his final conclusions.

From the post mortem findings in the kidneys of a woman who had died under the symptoms of anuria during an attack of eclampsia, Sippel (*Zb. f. G.*) concludes that the anuria was caused by an acute increase in the volume of the parenchyma, producing a high tension in the renal capsule. From this observation he feels justified in advising for similar cases an incision of the fibrous capsule in order to avoid complete anuria. It is obvious that Sippel is not acquainted with the work of Edebohls in New York, who, at the last meeting of the American Gynecological Society, reported his second case of puerperal eclampsia successfully treated by renal decapsulation.

Mention must be made of several papers which record very favorable results from the use of thyroid extract in the treatment of eclampsia. [Nicholson, Sturmer and Berkeley (in *B. J. o. O.*), Baldowski (in *Russki Wratsch.*)]. McNab (*B. J. o. O.*) administered with good effect 65 grains of the extract in two pints of saline solution hypodermically.

Based upon animal experimentation, Blumenreich and Zuntz (*A. f. G.*) propounded the theory that there exists a characteristic and peculiar

susceptibility of the central nervous system of pregnant women to all those toxic substances that are liable to produce convulsions. They had observed that the toxic effects of injections of kreatin into the brain were more marked in pregnant than in nonpregnant bitches. B. Wolff (Zb. f. G.) contradicts this theory. He acknowledges that the central nervous system of the pregnant woman is in a condition of greater irritability, but denies that this irritability is in any way specific for certain poisons.

That there are physiological relations existing between the nose and the genital organs was known for some time. The question of the connection between certain nasal disturbances and dysmenorrhœa has been widely discussed in recent years, and a nasal type of dysmenorrhœa seems today positively established. H. W. Freund (M. f. G. 20) investigated the relation between the nose and pregnancy, and found in a hundred pregnant women sixty times a hyperemia of the mucosa of the pharynx and hypertrophy of the turbinated bones, especially the lower. He noticed that in certain women a reflex hyperemesis may be started from swellings of these parts, and may be successfully relieved by a proper treatment of these nasal lesions.

Retention of urine and the necessity of catheterization is always an annoying complication of the puerperal state. The various explanations given for this condition, as paresis of the detrusor urinæ, spasm of the sphincter, insufficient abdominal pressure, the dorsal posture, etc., are unsatisfactory and applicable only to certain cases. A more satisfactory interpretation of the puerperal ischuria is offered by Carl Ruge (M. f. G. 20). Systematic cystoscopic examinations after confinement (first made by Stoeckel), showed that the bladder immediately after labor presents almost typical lesions, consisting mainly in small hemorrhages in the trigonum and at the neck of the bladder, often followed by an edema bullosum. It is very probable that these lesions are responsible for the retention of urine. This explanation seems at least more plausible than the one recently given by Ch. B. Reed (A. J. o. O.), for the ischuria, so often seen in retroflexion of the gravid uterus. In his opinion it is due to interference with the nerve ganglia that supply motor and sensory filaments to the bladder wall. He contends that when the incarcerated uterus reaches a certain size it impairs the function of these ganglia by pressure.

Very often the physician is confronted with the task to diagnosticate a past pregnancy. Physical signs are absolutely unreliable. Of greater practical importance is the microscopical examination of uterine scrapings. Naturally the presence of chorionic villi furnishes positive proof, but they degenerate in a very short time, often even before the ovum is expelled, and then offer considerable difficulty for diagnosis. Decidua was, for a long time, looked upon as tissue absolutely characteristic for pregnancy until Ruge demonstrated in chronic endometritis cells that

cannot be differentiated from decidua cells. Considerable interest was, therefore, aroused by a paper of Opitz (Zs. f. G. 42), in which he described certain changes in the glands of the endometrium which he considered conclusive for the diagnosis of a past pregnancy. Seitz (Zs. f. G. 48), first called attention to the fact that such glands can be found in the endometrium, independent from pregnancy. A lively polemic followed, in which it was duly emphasized that this question must be definitely settled on account of its bearing upon medico-legal decisions. Schallehn (M. f. G. 19), thinks that the diagnosis of pregnancy can be made positively when in the same scrapings both decidua and these "pregnancy glands" are found. Hitschmann (Zb. f. G.) describes the histological findings in two extirpated uteri. In one he found a young pregnancy without any indication of "pregnancy glands," in the other typical glands in the absence of pregnancy. Hitschmann mentions in this article that such changes in the endometrial glands seem to occur under the influence of menstruation, and this idea is strongly supported by investigations of Schwab (Zb. f. G.).

The difficulty of making a positive diagnosis of an existing pregnancy in its earlier stages is, in Sarwey's opinion, (Zb. f. G.), obviated by his observation that the fetal heartsounds in almost all cases can be heard as early as the thirteenth week of pregnancy, that is, seven to eight weeks earlier than the text-books state. If the writer's claim would prove true it undoubtedly would mean the addition of a most valuable aid in the early diagnosis of pregnancy. Interesting is an article of v. Herff (C. Schw. A.) in which he expresses his doubts about the reliability of Sarwey's observations. At several occasions, after abortions or operations for ectopic pregnancy, he had tried to auscultate the heart of living feti of twelve to sixteen weeks, but he was never able to hear heart sounds.

It is obvious that a definite opinion about the real value of certain gynecological operations, especially of those that bear the epitheton "conservative," cannot be gained until they have stood the crucial test of pregnancy. Cervix amputations have become rarer, and a number of the numerous operations for malpositions of the uterus have disappeared. A good resume of the present status of the question of complications during pregnancy and labor after hysteropexy is given in the papers of Lynch (M. f. G. 19), Sonnenfeld (M. f. G. 19) and Qui (An. de G., an English translation of the article in An. of G.). We had occasion to refer last year to the danger of rupture of the uterus after conservative myomectomy, and find in the literature of the year 1904 a very instructive article by Fellenberg (A. f. G. 71), in which he considers the etiological significance of uterine scars, caused by gynecological operations, in rupture of the uterus during labor. The sad fact must be recorded that there are already two cases known in which uterine rupture occurred after Cesarean section performed, according to

Fritsch's suggestion, with the transverse fundal incision. (Kerr in B. J. o. O. and Eckstein in Zb. f. G.). These two observations effectively set aside the claim made for Fritsch's operation that it never will cause a rupture in the old scar, as had been observed after the classical operation with a median incision.

Halban (M. f. G. 20) calls attention to another probable cause of uterine rupture during labor which so far has escaped consideration. He found in a pregnant uterus enormous phlebectasies and demonstrates the great clinical importance of this rare condition in so far as it not only causes a dangerous friability of the uterine wall, but also may be responsible for an atonic hemorrhage after the expulsion of the fetus. E. Oswald (H. B. 8) convincingly shows that in certain instances the uterine wall is ruptured by manual removal of an abnormally adherent placenta. It is interesting to note that such an occurrence at times seems unavoidable even when the operation is performed with the necessary skill and care. This is another paper of considerable medico-legal importance, because, as can be seen from the complete bibliography compiled by the author, in a great number of these cases malpractice suits were instituted against the attending physician. N. Ivanoff publishes in the *An. de G.* a very exhaustive essay on the etiology, prophylaxis and treatment of uterine rupture, in which he gives short descriptions of 124 ruptures observed in 118,581 confinements of the Maternity Hospital of Moscow. He states that the majority of the ruptures occurring in cases of contracted pelvis are spontaneous, while the majority of those observed in cases of placenta previa, or transverse position, are directly produced by the operative interference.

Instances of pregnancy with more than four feti are rare enough to warrant a short reference here to the reports of such cases by G. C. Nijhoff (B. J. o. O.) and Baudoin (*Gaz. Med. de Paris*). Nijhoff describes a case of quintuplets, and adds a very good photograph, from which it can be seen that the placenta consists of one continuous cake, to which all five cords are attached. A study of the condition of the chorion showed that three amnion sacs were enclosed in one chorion and that of the two other sacs each had its separate chorionic cover. Thus it could be ascertained that three female feti represented uni-ovular triplets, while the fourth female and the one male originated from separate ova.

Baudoin collected from literature five cases of sextuplet pregnancy. Three of the cases are well authenticated. The most recent of these cases is the one observed by Vortisch in 1903 in a negress. This woman had in preceding pregnancies given birth to twins, triplets and quadruplets. In the last, the sixth, pregnancy she had conceived from another husband. Of the six infants five were male, one female. It seems probable that altogether three ova were impregnated.

In a case of uterus septus J. Paulin (Hospitalstidende, No. 6) had the unusual experience of delivering the second twin seventeen days after the first was born.

Most writers agree today that there is an essential difference between the ordinary carneous mole and the hematoma mole, better known under the name of Breus' mole, who first described it. Rather unsettled, however, is the question of the formation of the hematoma mole. This peculiar mole always shows a distinct disproportion between the large ovisac and the small fetus. This characteristic condition was by various authors explained as due to the sub-chorionic hemorrhages which stretch the membranes, by a persisting growth of the fetal membranes after the death of the fetus, by a secondary shrinkage of the fetus after its death or by the possibility that this mole formed in a primarily hydramniotic ovum. While, undoubtedly, proof has been furnished that all these different conditions may exist, in many cases a histological examination of the specimens showed that the formation of a typical Breus mole is dependent upon the presence of several of these factors. From a study of eight specimens and a consideration of the extensive literature on the subject, Taussig (A. J. o. O.) suggests the following mode of development: The fetus dies in the first or second month of pregnancy, the membranes continue to grow and a secondary hydramnios ovum is formed. Later the ovum as a whole shrinks somewhat. In this way folds are formed in the membranes, which fill with blood from the intervillous spaces and thus are still further stretched. Another theory is propounded by Bauereisen (Zs. f. G., 51). He sees the primary cause of the formation of this mole in a disease of the endometrium. The vessels carrying the blood from the intervillous spaces become blocked by deported chorionic villi. The contributing causes are primary hydramnios and a continuation of the growth of the membranes after the death of the fetus.

The literature of the past year contains a number of very valuable contributions to the physiology of the genital organs.

From careful investigations it was known for some time that the number of Graafian follicles contained in the ovary of the new born is larger than that of the ovary at the beginning of puberty. Nothing definite was known about the fate of the Graafian follicles and the ovum in the premenstrual life until Th. G. Stevens (B. J. o. O.) published the results of his researches concerning this question. The follicle matures to a certain degree, when by a kind of phagocytosis first the ovum is removed and, then, retrograde changes begin in the follicle. New connective tissue is formed which first fills and then contracts the cavity until a little scar is left. In contradistinction to the process as seen during menstrual life, in the infant the Graafian follicle does not rupture and no corpus luteum is formed. It is rather doubtful whether this view of Stevens can be accepted in its entirety. At least, in all cases in

which impregnation takes place before the first menstruation, an occurrence, not by any means rare, the expulsion of a mature ovum from a ruptured mature Graafian follicle must be assumed. Interesting are the writer's allusions to the double function of the ovary during menstrual life in supplying sexual cells and producing some internal secretion. While the supply of sexual cells naturally is superfluous in the life of the infant, it seems to be proved by experimentation that the internal secretion of the ovaries plays an important part in the development of the female child. A good resume of the literature on internal secretion of the ovaries is given by H. Russell Andrews (B. J. o. O.) in an article which contains an exhaustive abstract of the classical work of L. Fraenkel on the function of the corpus luteum. We had occasion in our last year's report to dwell at length upon these extremely interesting investigations of Fraenkel which have been continued by him in the last year. In a paper read by the author before the Gynecological Society of Vienna (Fb. f. G.) he described additional observations in support of his theory that the corpus luteum is a gland with an internal secretion, that it sends cyclic nutritive impulses to the uterus, and effects the adhesion of the impregnated ovum in the uterine cavity.

A great obstacle has been thrown in the way of this theory by the work of Jankowski (Arch. f. Mikr. Anat. 64) which seems to demonstrate that the corpus luteum cells derive their existence from the theca interna. This membrane consists of connective tissue, that is, is of mesodermic origin. As yet we do not know, however, of any mesodermic tissue that would perform the function of secretion.

Most ingeniously planned experiments are described by Kurdinowsky (A. f. G. 73). He completely extirpated pregnant uteri of rabbits and succeeded in keeping them "alive," for several days in Locke's fluid. He produced contractions and was able to observe the entire act of expulsion of the fetus. By his experiments he proved that the uterine contractions are dependent upon the local innervation and absolutely independent of the central nervous system. Incidentally, he investigated the action of ergot, hydrastis, alcohol and other drugs upon the uterine muscle and established the most interesting fact that adrenalin, even in a solution of 1-10,000,000, immediately produces strong tetanic contractions of the uterus, and that its action upon the uterine muscle is undoubtedly much more intense than that of ergot or hydrastis.

A number of very carefully prepared papers were devoted to anatomical subjects. Jung (M. M. W.) gives a good description of the entire nerve supply of the female genitalia, while Hashimoto (H. B. 8.) studied their ganglia. It is noteworthy that the latter writer acknowledges the existence of the Frankenhaeuser ganglion in the cervix. A large monograph of R. Freund (published by G. Fischer, Jena), is devoted to the circulatory system of the uterus. Gellhorn (A. J. o. O.) furnishes a valuable contribution to the development, anatomy and pa-

thology of the hymen. The anatomy and clinical significance of the ligamentum sacro-uterinum is at length considered by Sellheim (H. B. 8). Kroemer's (Zs. f. G. 52), very extensive article on the lymphatic system of the female genitalia, is instructive on account of its bearing upon the carcinoma question.

The war between the advocates of the vaginal and the abdominal radical operations for uterine cancer is still waging. There can hardly be any doubt but that the abdominal route is fast gaining ground, but we still find men like Schauta, Ohlshausen, Winter, etc., as strong supporters of the vaginal route, that is, of the vaginal radical operation after Schuchardt. Of course, nobody admits any longer the propriety of the ordinary vaginal or abdominal hysterectomy. It is generally accepted that only operations which include a thorough eradication of both parametria, offer any chance for definite cure. The difference of opinion is now mainly concentrated around the question of the extirpation of lymphglands. Practically, nothing can be done in this respect through the vagina, but even the most radical of the abdominal operations do not permit of a complete removal of the lymphatic system of the uterus, and thus do not deserve the name "radical." This point is very forcibly brought out in a paper of Schauta (M. f. G. 19), which represents a very strong support for the justification of the vaginal operation even at the present day. Incidentally these most painstaking investigations of Schauta demonstrated that carcinomatous glands, secondary to uterine growths, may remain encapsulated and latent for a very long time, and may, after removal of the primary tumor, even undergo a necrosis and completely disappear. Schauta shows that the Schuchardt operation with the paravaginal incisions, permits the extirpation of the parametrium clear to the pelvic bones, just as the abdominal operations do. Considering the undeniable fact that the vaginal operations are attended by a decidedly smaller immediate mortality, Schauta seems justified in concluding that the vaginal is the route of choice in the extirpation of the carcinomatous uterus. Similar are the views expressed by Olshausen in a paper read before the meeting of the British Medical Association, by Winter (M. f. G. 19, p. 769), the well known authority in the cancer question, and by Kroemer in his article on the lymphatic system which was mentioned above. Additional support for the vaginal operations may be found in publications like that of Manteufel (H. B. 8), in which he describes metastases in the iliacal glands, and acknowledges the claim made by several writers, that the macroscopic inspection of the glands during the operation does not allow any reliable conclusions, since under the microscope carcinoma tissue may be detected in exceedingly small glands.

Mackenrodt (M. f. G. 19), in an answer to Schauta's paper, shows that the abdominal operation devised by him permits the extirpation of a group of glands that Schauta considers beyond the reach of any ab-

dominal operation. He, therefore, concludes that his operation finally will show results better than those which Schauta expects from his theoretical considerations. Nevertheless, he fully agrees with Schauta that there still exists a good justification for defending the radical vaginal operation.

As has been said before, the great majority of modern writers, give, however, preference to abdominal operations, among them chiefly to those devised by Wertheim and Mackenrodt respectively. Probably the next year will bring the decision in this question, because the five-year limit will have passed for a greater number of operations of this kind. At the last meeting of the Society of German Naturalists and Physicians Mackenrodt reported that since 1901 he had performed his operation on seventy-one patients with an immediate mortality of 19.7 per cent. Of the cases in which from one to three years have elapsed since the operation 77 per cent. are still free of recurrence. Wertheim announced at this occasion that of his patients 18.2 per cent. are free of a recurrence more than four years. Doederlein had used the vaginal operation up to 1902 and calculates his definite cures as 19.6 per cent. (according to Winter's form of calculation). In a rather superficial manner, John B. Deaver (A. J. o. O.) decides the question in favor of the abdominal route. In his paper no mention is made of the extended vaginal operation after Schuchardt or of the importance of removing the parametria when operating by laparotomy. He thinks that it is quite superfluous to remove the iliac glands, because in a few cases in which he had removed them he found them only inflamed and not cancerous.

If we understand the trend of thought in the latest literature on uterine cancer correctly it seems that the idea of a complete extirpation of all lymph glands and the connecting lymph vessels has been abolished. Some operators insist upon having certain groups of glands removed in all instances, without any consideration of their size. Undoubtedly the Mackenrodt operation is in this respect the most satisfactory one. All operators agree upon the necessity of a thorough removal of the parametrian tissue.

But as has been stated often and often, really satisfactory results cannot be expected from more extensive, from more dangerous, but only from early operations. How well founded this contention is, first expressed by Winter, is most convincingly shown by his report on the results of his systematic fight against cancer in East Prussia. (Monograph, published by F. Enke.) This essay probably forms the most valuable contribution to the gynecological literature of the past year and was at length abstracted in the June number of this journal. (P. 384.) Winter has furnished the positive proof that by a systematic propagation of a better understanding of the first symptoms of cancer of the uterus among physicians, midwives and the laity much can be achieved towards inducing such patients to consult physicians in the earlier

stages of their disease. With just one year of this ingeniously carried on warfare the operability of patients suffering from uterine cancer has increased in Winter's clinic from 71 to 82 per cent., in the hands of all specialists operating in East Prussia from 52 to 65 per cent.

The lively discussion of the cure of uterine cancer by means of more or less extensive operations has almost completely suppressed a consideration of the important question, what should be done with those unfortunate patients to whom no hope, not even in the form of a possibly radical operation, can be offered. Very little has been written on this subject since Czerny read his most interesting paper before the German Surgical Association in 1900. That our customary views concerning the fate of the unoperated cases need some rectification is shown by Lick (M. f. G., 20). The immediate results of a prophylactic excochleation and escharization are good, but also the late results are not entirely discouraging. A few of the patients treated in this way did not die until one and a half, two years, one case even four and a half years after excochleation. Neither the age of the patient nor the general or local condition permit any conclusions as to the probable termination of her life.

We cannot close this review of the cancer literature of the year 1904 without referring to a series of most valuable and interesting papers published by John A. Sampson (J. H. B. and J. A. M. A.). He considers systematically the invasion of the surrounding tissues, parametrium, ureters, bladder and rectum, and elucidates numerous details of extreme practical importance in the radical operation. There are, *e. g.*, two articles upon freeing the ureters in which he emphasizes the importance of preserving the peri-ureteral sheath. He explains the frequency of serious cystitis after radical extirpation of the cancerous uterus, with parametrium and lymph glands as due to partial destruction of the blood and nerve supply of the bladder wall. He claims that much can be done to avoid this cystitis by catheterizing the patient regularly every three to four hours. We will mention in this connection two papers by Baisch (Zb. f. G. and H. B., 8) in which similar views are expressed. By means of experiments on animals this author shows that the cystitis will develop only if the bladder is injured; mere retention of urine, even with artificial infection of the cavity of the bladder, does not produce cystitis. He obtained very satisfactory results in preventing post-operative cystitis by following every catheterization with a thorough irrigation of the bladder with an antiseptic solution.

Another malignant growth of the female genitalia which at present holds the attention of the gynecologist is chorio-epithelioma. When first the true nature of this tumor was recognized and the number of reports of such cases began to grow rapidly, it was pronounced the most malignant of all new growths. In 1897 Eiermann collected sixteen cases in which a complete and permanent cure was obtained by vaginal

extirpation of the uterus. Later reports appeared of cases in which a complete cure followed operations in which it was impossible to extirpate all the diseased tissue. Of late the fact has been established that in some cases a typical chorio-epithelioma has disappeared spontaneously or after a simple curettment, which certainly is not capable of removing the tumor radically. Modern gynecologists cease to abbreviate the former term "chorio-epithelioma malignum" simply into "chorio-epithelioma," but begin to differentiate between a benign and a malignant form of this growth. Naturally, strong efforts have been made to find characteristic histological features that would enable us to decide the character of the tumor before operation. A number of papers are devoted to this interesting and extremely important subject. The question is apparently not yet settled. Hoermann (H. B., 8) thinks that neither the clinical picture nor the histological examination of scrapings give any clew. In a very exhaustive paper Hammerschlag (Zs. f. G., 51) arrives at similar conclusions. He cites the very remarkable observation that the primary uterine growth may disappear spontaneously or after curettment, while metastases of this growth may develop an extremely malignant character. Special stress is laid upon the possibility of a spontaneous disappearance of chorio-epithelioma in an article by Grein (A. f. G., 71). The results of the investigations of D. v. Velits (Zs. f. G., 52) will be of great practical value if they shall prove true. He claims to have found such a characteristic microscopic picture, consisting in either scanty appearance or complete absence of mitosis in the Langhans cells, indicating a reduced vitality of these cells in benign forms of chorio-epithelioma. This deficient mitosis is accompanied by an increase in the number of migrating cells, which, in his opinion, are the products of the necrobiotic process taking place in the tumor. Reeb (A. f. G., 71), Krukenberg (Zs. f. G., 53), and Littauer (A. f. G., 72), concur in the importance of a careful examination of all suspicious uterine scrapings in order to guarantee an early operation, which alone holds out some hope for a definite cure. They and other writers believe that even in those cases in which the microscopical examination of small tissue particles is only very suggestive, but not absolutely conclusive for the presence of a chorio-epithelioma, the uterus should be extirpated through the vagina without any loss of time in waiting for further developments.

There have been a few cases of chorio-epithelioma reported which are of considerable clinical interest. Hinz (Zs. f. G., 52) describes a typical chorio-epithelioma, with fatal metastases in the lungs and liver, that had developed in the stump of a tube, a part of which had been extirpated on account of a tubal pregnancy. McDonald (Albany Med. Annals) found a chorio-epithelioma in a myomatous uterus. Interesting from the point of differential diagnosis is a case of Hoermann (H. B., 8), in which a chorio-epithelioma perforated and caused a severe

internal hemorrhage, which naturally lead to the diagnosis of rupture of an ectopic pregnancy. It is noteworthy that such a perforation of a chorio-epithelioma into the peritoneal cavity may occur after very careful bimanual examination or the use of the uterine sound.

Two contributions are devoted to the etiology of this new growth.

McFarland (A. J. o. O.) bases an hypothesis concerning the development of chorio-epithelioma, or, as he names it, syncytioma malignum, upon the immunity theories of Ehrlich and Morgenroth. Positive evidence seems to have been brought that the introduction of almost any foreign substance into the body is followed by a defensive reaction which more or less successfully will counteract the eventual damage done by the presences of said foreign substance. Such a defensive reaction may be general or local or both. It is now generally accepted that the trophoblast exerts an eroding effect upon the maternal tissues, and due to this action is the fact that syncytial tissue, which develops from the trophoblast, is found deep in the uterine wall. McFarland concludes that it is there held in bond and prevented from a further exertion of its destructive character by the defensive reaction on the part of the maternal organism. Do the maternal tissues fail in their antagonism, then the syncytium continues its eroding and destructive operation, and develops the characteristics of the syncytioma malignum.

In a rather peculiar manner Sfameni (A. I. de B. 40) attempts to explain the etiological relation between hydatiform mole and chorio-epithelioma. He tries to prove that the vesicles of an hydatiform mole constitute a new growth of *epithelial* character. He states that the interior of a vesicle is not made up of connective tissue, as is claimed by practically all authorities, but consists of degenerated epithelial cells. In his idea the one essential element in the formation of a vesicle is syncytium. He thus finds very little difficulty in proclaiming that hydatiform mole and syncytioma malignum are histologically identical. Those familiar with the literature on this subject will readily see that the author's views are diametrically opposed to those held by almost all modern writers. One cannot be surprised, therefore, when Sfameni concludes his article with the announcement that in another paper he intends to show that the syncytium originates from the uterine epithelium, or, with other words, that chorio-epithelioma is a malignant growth developing from maternal tissue.

Concerning the subject of chorio-epithelioma, the literature of the past year reveals the tendency of differentiating a benign form of this, as a rule, malignant growth. Just the opposite inclination is manifest in the writings on the subject of myoma of the uterus. In our last year's report we had occasion to point to the efforts of many writers to demonstrate the malignant character of uterine myomata. The year 1904 did not bring any change in this course. C. Daniel (R. d. G.) found in 59 per cent. of all cases operated for myoma pathological con-

ditions in the tubes, such as catarrhal, parenchymatous and purulent salpingitis, hydrosalpinx, hematosalpinx, tuberculosis and extrauterine pregnancy. In 40 per cent. of the cases pathological changes were present in the ovaries. In the author's opinion the frequency of such alterations in the uterine appendages is to a great extent responsible for the frequency with which sterility is observed in such patients. This latter explanation can hardly be accepted, because the very carefully prepared statistics of Hofmeier have conclusively shown that fibro-myomatosis of the uterus has but a slight effect upon fertility. Additional proof for the reliability of Hofmeier's figures has only of late been furnished by Treub (B. de S. O.). Another dangerous and, as it would seem, very common complication of uterine myoma is described by Fleck (A. f. G. 71). He recorded pathologic conditions of the heart in 41 per cent. of all myoma patients. This figure is, in his opinion, still too low, because in a great number of cases the alteration is latent, consisting in a relative insufficiency of function, which only becomes manifest when increased demands, especially after operation, transform the relative into an absolute insufficiency. Richelot (An. de G., Dec. 1903) observed in his own practice three cases of malignant degeneration of the cervical stump, left after supravaginal amputation of the myomatous uterus. He quotes ten other well-authenticated cases of this kind from the literature, and concludes that a fibro-myoma actually predisposes a uterus for the development of a carcinoma. He considers any attempts of conservatism in dealing with uterine myomas as unjustifiable. Batigue (La G.) repudiates this extreme position of Richelot, and emphasizes the possibility that a cancer of the cervix may have been present at the time of operation. Of all the cases of Richelot only one, in his opinion, permits the assumption that the carcinoma really developed after the operation. That an existing cervical cancer may be overlooked is shown in an interesting report of Bland Sutton (B. J. o. O.). He performed total hysterectomy per abdomen for multiple myomas. A year and a half later in this patient a carcinoma developed in the vaginal scar. A microscopical examination of the old specimen now revealed the presence of a cancer in the cervix. But in the same paper the author puts another unimpeachable case of malignant degeneration of a cervical stump on record.

In an article on the malignant degeneration of myomas Haultain (B. J. o. O.) antagonizes the trend of modern writings. His explanation for this radical tendency is that "the intrepid gynecologist, glorying in the successes of modern surgical technique, loves to believe that fibroma pre-eminently predisposes to malignancy and must without exception be removed." The author does not believe in the malignant degeneration of the cervical stump, apparently because in one hundred (!) cases operated by him with supravaginal amputation of the uterus, such an occurrence never was observed. Many other arguments furnished by

this writer are absolutely untenable in the light of recent investigations. Thus he concludes, that a patient, if possible, should be kept in ignorance of the tumor, since "her life is in no way menaced by its presence." It is obvious that Haultain's article is hardly convincing enough to stem the tide. Practically all contributions to the myoma question advocate radicalism. McDonald (Albany Med. An.) gives very reliable figures as to the frequency of degenerations and complications of uterine myomas. He combines the statistics of Martin, Noble, Cullingworth, Scharlieb and Frederick and adds 280 cases of removal of the myomatous uterus in the service of the Albany General Hospital and twenty-six observations of myomas at post mortem examinations. The one practical conclusion he draws from these statistics is that all fibroids which produce symptoms should be removed **at once**. Ch. P. Noble (Am. M.), whose valuable contributions to this question have often been mentioned in this journal, defines once more his position. He believes that every fibroid of the uterus should be removed and that exceptions to this rule will be based upon the facts in particular cases—the small size of the tumor, its subserous development and the existence of complicating diseases which would render operation especially hazardous. At the last meeting of the Association of Obstetricians and Gynecologists (in St. Louis, reported in A. J. o. O.) R. B. Hall dwelt upon the reasons for an early operation. Th. B. Eastman answered in an instructive paper the question: Shall we remove all fibromata of the uterus on diagnosis, in the affirmative. In the discussion of these papers Carstens said that we ought to deal with a fibromyoma exactly as with the diseased appendix, that is, remove it at once. Pfannenstiel (D. M. W.) pleads for early and radical operation. "Just as for all other growing tumors it is the only rational method of treatment."

But even among those that stand for immediate removal of all uterine myomata a difference of opinion exists as to the kind of operation that should be performed, whether myomectomy or hysterectomy, and in the latter case, whether total or subtotal (supravaginal). The question between the two forms of hysterectomy will hardly ever be definitely settled. Both of these operations have distinct advantages and disadvantages, they give about equal results in the hands of operators who are accustomed to the one or the other operation. The possibility of a malignant degeneration of the stump cannot be denied, but is probably so rare an occurrence that it hardly will be able to finally lead to a general adoption of the total hysterectomy.

Winter (Zs. f. G., 51) discusses the scientific principles underlying conservative myoma operations and defines them as follows: They preserve menstruation and the possibility of pregnancy. They prevent the disagreeable symptoms of artificial menopause. They do not remove the possibility of a recurrence. They do not offer any guarantee for a complete removal of all symptoms. They show, whether performed

through the vagina or the abdomen, less favorable immediate results than the radical operations. After a careful consideration of these points he concludes that in general we ought to be radical, that we are, however, permitted to perform a conservative operation if the patient desires the preservation of menstruation and her faculty of bearing children. Martin (M. f. G., 20) does not consider Winter's argumentation entirely convincing and still adheres to his belief that there is a good field for conservatism in myoma operations. J. W. Taylor (B. J. o. O.) on the other hand does not see any points in favor of conservatism and thinks that myomectomy should be limited to single tumors which are easily enucleable.

Even if the radical operation is performed the ovaries should, whenever possible, be preserved. Werth was the first to emphasize the advantage of such a practice, in order to avoid the troublesome symptoms of an artificial menopause. Soon afterwards it was claimed by a few writers that such conservatism only complicates the operation and does not bring the expected benefit, because these ovaries soon atrophy. These views seem to be confirmed in a very noteworthy monograph of Mandl and Buerger (published by F. Deuticke, Vienna), which deals with the biologic importance of the ovaries after removal of the uterus. Menstruation disappears, but the menstrual wave is preserved, at least for some time. As soon as the ovaries cease to functionate (cessation of internal secretion), the menstrual wave disappears and the symptoms of menopause become manifest. Keitler (M. f. G. 20), who also is interested in this question, calls attention to his observation that the ligation of the ovarian branch of the uterine artery during operation will cause a distinct alteration of the ovary, but that as a rule an atrophy is prevented by the existence of sufficient collaterals. That the preservation of functioning ovaries, however, in certain instances may have a very undesirable effect is clearly demonstrated in a case reported by Agnes Bluhm (M. f. G. 20). About one year after a vaginal panhysterectomy the patient began to suffer from severe pelvic pain, recurring every four weeks. The ovaries were finally removed by laparotomy. There was no more pain, but the characteristic symptoms of artificial menopause appeared promptly.

A very scholarly study of the literature on the question of spontaneous disappearance of uterine myomas before the menopause we owe to Alban Doran (B. J. o. O.). He distinguishes three different forms: (1) disappearance as the result of destructive inflammatory processes, which, probably, is the most common cause; (2) disappearance after delivery, when the fibroid shares the process of involution with the uterine muscle, and (3) true disappearance, independently from necrotic processes or pregnancy, or any operative or non-operative therapeutic interference. The author selects from the literature well authenticated cases

which prove the possibility of such a spontaneous disappearance or resorption. The occurrence is, however, undoubtedly a rare one.

We beg the reader's pardon for mentioning here an article entitled "The Added Proof," by Mary A. Dixon Jones. In this paper Mrs. Jones informs us that "by the microscope she was enabled to decipher the cause, origin and formation of fibroid tumors of the uterus." Among the authorities quoted by her we find besides herself "The Sacred Volume," "The Divine One," "The Great Apostle Paul" and others. This article could have found its worthy place in the "Funny Number," annually published by the *Muenchn. Mediz. Wochenschrift*, and we mention this contribution to gynecologic literature in this connection solely for the purpose of protesting against its publication in the September number of *Annals of Gynecology and Pediatrics*.

It is an accepted fact that sometimes the cells of malignant growths will resemble not only the shape but even the function of the tissue in which they form. Thus, *e. g.*, Eiselberg reported a case in which, after the extirpation of a cancerous struma, the typical symptoms of tetany and cachexia developed, which disappeared when a metastasis of the malignant primary tumor formed on the sternum, and which promptly reappeared when this metastasis was removed. Similar observations were recorded for other growths. A number of writers described the new formation of Graafian follicles with ova in ovarian carcinoma. Liepmann (Zs. f. G., 52) had opportunity to observe such "follicles" in an adeno-carcinoma of the ovary. He emphatically denies the possibility of such a development of new ova, and shows that these formations, although in their appearance to a certain degree resembling ova, are simply products of a retrogressive metamorphosis. To almost identical conclusions comes Polano (Zs. f. G., 51) in a paper on pseudo-endothelioma of the ovary.

In the opinion of Alban Doran (B. J. o. O.) there is no special symptom or group of symptoms known by which a small, painful ovarian tumor could be differentiated from an inflamed ovary. Not all ovarian tumors are painful in their incipient stage, but if they are it is advantageous to the patient, because this fact may lead to an early diagnosis. If, in the case of an enlarged, painful ovary, bed rest causes diminution of pain while the ovary is observed to increase in size, the evidence for an ovarian tumor is strong but not conclusive.

A rather interesting theory concerning the causation of ectopic pregnancy is offered by Hitschmann (Zs. f. G., 53). He believes that the ovum becomes impregnated near the abdominal end of the tube. It moves through the tube into the uterus, while at the same time in the ovum certain changes occur that develop its faculty of imbedding itself. If for certain reasons the progress of the ovum on its way to the uterus is retarded, while its internal development advances normally, it reaches the faculty of imbedding itself comparatively too early, and

may settle down in the tube. Hitschmann's theory seems plausible, especially because it is based upon very painstaking investigations made in company with Lindenthal. His theory is in its main aspects almost identical with one advanced at about the same time by Keller. Another contribution to the etiology of tubal pregnancy is furnished by Hoehne (A. f. G., 74). He had the original idea of studying the anomalies in the course of the tubal lumen by injecting into it a stained substance consisting chiefly of glue. On transverse sections he could easily follow all the sacculations and branches of the tubal canal, and found in a number of specimens, examined in this manner, widespread canalisation of the muscular coat of the tube. The importance of this observation for the etiology of ectopic pregnancy is obvious. Interesting is the fact that all the tubes, in which such canals with an epithelial lining were found, showed distinct signs of old inflammatory processes.

Since the existence of primary ovarian pregnancy has been positively established, the number of well authenticated cases of this form of ectopic pregnancy is growing fast. Kantorowicz (V. k. V., No. 370) collects all the old cases and reports two new ones. Other new cases are described by Micholitsch (Zb. f. G., Dec., 03), Boesebeck (M. f. G., 20) and Clarence Webster (A. J. o. O.). In presenting his case Webster refers to his belief, based on phylogenetic grounds, that the fertilized human ovum can only become attached to and develop in tissue derived from the Muellerian ducts. Ovarian pregnancy, whose existence was denied by many writers up to a recent date, does not necessitate a modification of his contention because there are a number of evidences on hand which prove the occasional extension of tissue of the Muellerian ducts into the substance of the ovary. Webster lays, in this connection, special stress upon the recent observations of Schmorl, Lindenthal and others concerning the presence of deciduallike cells in the ovaries of pregnant women, which he considers to be detached Muellerian tissue.

The simultaneous existence of an intrauterine and an extrauterine pregnancy is a problem of extreme scientific interest. That it is not entirely void of practical importance can be seen from the fact that Simpson (A. J. o. O.) was able to collect 113 cases of this kind from literature. His paper contains valuable information concerning the diagnosis of this extremely dangerous complication of an intrauterine pregnancy.

We notice in the gynecological literature of the past year four larger contributions to the etiology and histology of vaginal cysts. Fredet (An. de G.) proposes the following classification: (1) Cysts of Wolffian origin; (2) cysts of Muellerian origin, that is, arising from the uterine-vaginal canal of Leuckhart; (3) cysts of peritoneal origin, arising from the embryonic cul-de-sac of Douglas, and (4) glandular cysts. The

cysts of Wolffian origin are the most common, they are situated in the lateral vaginal walls. Cysts of peritoneal origin are located in the posterior fornix, they are lined by a single layer of epithelium. The existence of glandular cysts cannot be denied, When arising from vulvovaginal glands they are situated low down in the vagina.

It is true that Waldeyer, Nagel, Gebhardt, Gegenbauer and others have asserted that they never have seen a vaginal gland; there are, however, a few cases described (Geyl, Poupinel, Davidsohn and others) which undeniably prove the presence of glands in the vaginal mucosa.

As a new, unimpeachable case of glandular vaginal cyst must be accepted, the one described by Widmer (H. B. 8.) Two other papers on vaginal cysts that convey similar ideas are published by F. E. Pierce (A. J. o. O.) and Emil Pollak (Zs. f. G. 52).

It is a generally accepted rule that whenever the abdomen is opened the appendix should be inspected, and should be removed if found diseased. In this way the decision whether an appendix is diseased or not is necessarily left to a macroscopical inspection. From careful histological examinations of 200 appendices, however, Reuben Peterson (A. J. o. O.) is forced to conclude that the mere shape or length of an appendix cannot serve as an index of its normality or disease. On the other hand, he found that in nearly 50 per cent. of all laparotomies performed for other reasons than appendicitis, the appendix was found microscopically diseased. Peterson, therefore, feels justified in advocating the removal of the appendix as a routine procedure during laparotomy, if not special contraindications exist which prohibit a prolongation of the anesthesia.

J. M. Baldy (Am. M.) holds quite antagonistic views. He cannot understand why so many surgeons worry themselves about the relation between inflammatory processes in the appendix and those in the right tube. In his belief these two conditions are absolutely independent from each other, and, if found in the same patient, their co-existence is a mere accident.

Finally, we have to consider the literature on the subject of malposition of the uterus. It would seem that a little less has been written during the past year upon this favorite topic.

Winter (Graefe Sammlung, 1904), gives a very clear and complete resume of the causes of prolapse, and sees one of the most important factors in its etiology in a too rapid stretching of the vagina during confinement. This is, in his opinion, often caused by a too early pressing on the part of the patient or a too hard pulling on the part of the physician. He recommends immediate and careful repair of all injuries of vagina and perineum. Buerger (A. f. J. 73), concludes that the atrophy of the muscles of the pelvic floor, which is never missing in cases of prolapse of the uterus, is not, as generally thought, a secondary

condition but the primary cause for the descensus of the organ. One of the main supports for his theory he finds in the absence of a muscular pelvic floor in cases of total prolapse of the uterus in new born infants or nulliparae. Schaeffer (A. F. G. 71), on the other hand, believes that local disturbances in the blood circulation furnish the primary cause for the development of this malposition of the uterus.

A number of new operations have been devised for the correction of a retrodeviation of the uterus. It would be hardly possible to describe here any of these procedures, which, at the most, consist in the formation of a still more complicated loop in the round ligaments. A good general survey of all the various methods in use, with a description of the author's new Auto-Plastic Suspension, can be found in an article of F. H. Martin (A. J. o. O.). A "new" mode of intra-peritoneal shortening of the round ligaments was described by Menge (Zb. f. G.). In an article, appearing shortly afterwards in the same journal, Kleinwaechter ironically remarks that probably every reader of Menge's paper, who is somewhat familiar with gynecological literature, must have felt, as he himself did, namely, that Menge's new operation is quite an old one—it is identical with the operation invented and described by Palmer Dudley of New York in 1890.

In concluding this article it is hardly necessary to state that no attempt was made to give a complete review of the obstetrical and gynecological literature of the year 1904. We trust that we have not overlooked any contributions of real importance, and thus succeeded in our aim to outline within the given limited space the advance made during the past year in these branches of medicine.

BIBLIOGRAPHY.

If not otherwise indicated the articles quoted in this review have appeared during the year 1904. The following abbreviations were used:

- | | |
|---|---|
| A. f. G.—Archiv fuer Gynaekologie. | H. B.—Hegar's Beitræge zur Geb. u. Gyn. |
| A. I. de B.—Arch. Ital. de Biologie. | J. A. M. A.—Jour. of Am. Med. Assn. |
| A. J. o. O.—Amer. Journal of Obstetr. | J. H. B.—Bullet. of Johns Hopkins Hosp. |
| Am. M.—American Medicine. | La G.—La Gynecologie, Paris. |
| An. de G.—Annales de Gynec. et d'Obstetr., Paris. | M. f. G.—Monatsschrift fuer Geb. u. Gyn. |
| An. of G.—Annals of Gynec. and Pediatrics. | M. M. W.—Muenchn. Med. Wochenschr. |
| B. de S. O.—Bullet. de la Soc. d'Obst. de Paris. | R. d. G.—Revue de Gyn. et Chir. Abdom. |
| B. J. o. O.—Jour. of Obst. and Gyn. of Brit. Emp. | V. k. V.—Volkmann's klinische Vortraege. |
| C. Schw. A.—Correspondenzblatt Schweizer Aerzte. | Zb. f. G.—Zentralbl. fuer Gynaek. |
| D. M. W.—Deutsche Med. Wochenschr. | Zs. f. G.—Zeitschrift fuer Geb. und Gynaek. |

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

FEEDING OF INFANTS.—The literature, as usual, has contained a great number of articles on this subject. Comparison of statistics of mortality of breast and hand-fed infants¹ show that despite the advances in substitute feeding, the artificially fed child is still at an enormous disadvantage. Chapin² contributes an interesting article on the influence of breast feeding on the infant's development. The mother's milk is a food that adapts itself to the infant's developing intestinal tract, and so the difficulties in artificial feeding are not merely, as is so often assumed, chemical. They are largely due to physiological differences between human and cow's milk. In artificial feeding we must attempt to aid the developmental processes, and so in the art of feeding it is necessary to do more than find a food that will agree. Mere gain in weight is not always a satisfactory criterion. Bunge³ as the result of careful analysis of a large series of cases, emphasizes the "hereditary influences" of the inability to nurse. He finds that chronic alcoholism in the antecedents is a potent factor in the production of this inability, which he believes to be steadily on the increase. Levy, in a thesis on *Cytoprognosis of Lactation*⁴ says that a high proportion of polymorphonuclear neutrophiles in the colostrum (centrifugalized), is a sign that there will be an abundant secretion of milk, while a high percentage of lymphocytes is a bad sign. He advocates the examination of the breast fluid in this way, just before lactation is established, in order to form some idea as to the probability of the mother's being able to nurse.

ARTIFICIAL FEEDING.—The importance of securing clean milk for any system of modification, is everywhere insisted upon.^{5, 6} Boston has even established a municipal bacterial standard⁷ of 500,000 bacteria to the c. c., to which all milk vendors must conform, on penalty of losing the license. While this bacterial standard is much lower than that adopted by the private milk commissions of many cities⁸, it is, nevertheless, a long step forward toward the solution of the question of the control of the milk supply of cities. So far as exact methods of modification are concerned, it is now generally admitted that home modification with milks and creams of known fat strengths is very satisfactory⁹. It is of interest, in connection with the question of laboratory modification, to note the opinion of one of Germany's leading pediatricists, Stoeltzner, of Berlin. He has this to say, in reviewing an article of Rotch's¹⁰: "It appears very questionable to the reviewer, whether the good results obtained are due essentially, as the American authors would have us be-

lieve, to the laboratory modification, *per se*. The dairies in connection with the laboratories, furnish an extraordinarily clean milk, which can be shipped for great distances without previous sterilization, without deterioration. The use of such milk, without any modification, would probably give excellent results."

In an article on "Milk for Infants and Infant Mortality," Behring¹¹ insists that milk ought to be given to infants raw. The heating of milk destroys the tubercular immune bodies. If raw tubercle-bacilli free milk cannot be obtained, he would advise the addition of formalin to the milk in the proportion of 1 to 10,000. This prevents the multiplication of germs. Experiments on *calves* showed such milk to be absolutely harmless. In view of the attitude of most municipal health boards, who provide punishment for dairymen who formalinize their milk, this view is worthy of note.

Price¹² made a series of experiments on calves to determine the comparative digestibility of raw, pasteurized and sterilized milk. His general conclusion was that the raw milk was much the more digestible. In connection with the question of raw milk it is of interest to note that Halipre¹³ insists upon the advantages of clean *raw* milk, from tuberculin tested herds. Coming from a well-known pediatricist of the French school, which has heretofore insisted upon the necessity of absolute *sterilization* of all milk, this must be regarded as a great concession. Backhaus,¹⁴ while admitting that aseptic milking may do away with the necessity for sterilization, believes that ordinarily it would be dangerous to give raw milk. He thinks that pasteurization renders the milk indigestible, and insists upon sterilization to 102° C., the milk to be kept at this temperature for fifteen minutes, and then rapidly cooled.

The value of buttermilk as food for infants, previously alluded to in these reviews, is attested by many observers.¹⁵ While it appears to yield particularly good results in the treatment of gastro-enteritis, it may also be used to advantage, at times, in the feeding of healthy infants.

As the result of one hundred experiments on infants from sixteen days to two months old, with reference to starch digestion, Shaw¹⁶ concludes that the saliva of very young infants contains a diastasic enzyme capable of converting small amounts of starch; that this diastasic action may continue in the stomach as long as two hours after feeding; and that on physiological grounds, therefore, there is no reason why infants cannot digest small amounts of starch.

Nobecourt and Vitry,¹⁷ as the result of a series of observations, believe the giving of sodium chloride to poorly nourished breast-fed children to be of distinct value. A decided gain in weight is usually noted. About 1.0 per day, in divided doses, should be given in water before nursing. Poynton¹⁸ has found that the addition of citrate of soda to cow's milk, in substitute feeding, helps to render the curd more easily digestible.

GENERAL HYGIENE.—The first International Congress for School Hygiene was held at Nurnberg, Germany, in April. Detailed abstract of the transactions is impossible here. Those interested may consult the complete reports in the German pediatric journals.^{19, 20} The subject of school hygiene is attracting more attention than ever before. It is gratifying to note that, in America, the system of medical inspection of schools, which has yielded such excellent results, is being introduced in many of our smaller cities. It is already in vogue in nearly all of the larger ones.²¹

DISEASES OF THE NEWLY-BORN.—Breel²² calls attention to a pseudo-diphtheritic symptom complex often seen in the newly-born. As a result of mechanical irritation there occur small erosions of the mucous membrane of the palate. Secondary infection, with membrane formation and constitutional disturbance, is then common. The picture thus simulates diphtheria very closely. Prophylaxis consists in the avoidance of too much swabbing of the mouth.

Kilmer²³ calls attention to the hematoma of the sternocleidomastoid muscle, caused by injury to that muscle during birth. The hematomata may occur along the whole length of the muscle, and are often not noticed until some time after birth. A characteristic torticollis makes the diagnosis easy.

SPECIFIC INFECTIOUS DISEASES.—*Scarlet Fever.*—The question of the specific etiological factor is still under very active discussion. Much literature has appeared concerning the role of the streptococcus. Many authors, among them Baginsky, of Berlin, are inclined to believe that scarlet fever is certainly a streptococcus infection, though the actual species has not yet been discovered. Joemann²⁴, however, is of the opinion that streptococci do not play an important role in the etiology of scarlet fever, though he admits that streptococcus infection is a frequent and important concomitant of the disease. In the blood of 161 scarlet fever patients, examined early, he found streptococci twenty-five times. Of these, all but one died. Just before death, however, streptococci were found in the blood in at least half the cases. The tonsils are believed to be the port of entry. Streptococci are not believed to stand in causal relation to scarlatinal nephritis. Schamberg and Gildersleeve²⁵ think that neither the strepto- nor the staphylococcus can be looked upon as the specific agent. The diplococcus of Glass was found in only a very small percentage of their cases, and is not regarded as specific. These authors consider that Mallory's find²⁶ of a protozoan body, the "cyclaster scarlatinalis," is at least very suggestive. This same view finds expression elsewhere²⁷. After a series of agglutination tests with the serum of scarlet fever patients, Dopfer²⁸ claims that the non-specificity of the streptococcus is clearly shown. He, too, considers its role a purely secondary one.

In the course of an address on scarlet fever, Lauder²⁹ holds that the infection in scarlet fever is of naso-pharyngeal origin. The rash and the constitutional symptoms are believed to be manifestations of the bacterial toxæmia. According to this view the danger of contagion during the period of desquamation has been much exaggerated. His hospital cases are isolated during the early stages, when the naso-pharyngeal infection is at its height. A summary of the cases treated is given, and the original article is worthy of careful reading. Schamberg³⁰ contributes a valuable paper on the diagnosis of scarlet and scarlatinoid affections, in which the differential diagnosis of obscure and difficult cases is fully discussed. Uffenheimer³¹ considers the relation between scarlet and diphtheria. The two diseases often coincide, but scarlatinal infection in diphtheria is much more serious than a diphtheritic complication of scarlet. He believes that tonsillitis in scarlet, *per se*, must be regarded as diphtheritic if Klebs-Loeffler bacilli are found, but he thinks that antitoxin should be used in all suspicious cases without awaiting the result of the bacteriological examination. There are, however, unquestionably cases of scarlet, with formation of pharyngeal or laryngeal membrane, without the presence of Klebs-Loeffler bacilli. These are cases of streptococcic infection.

Schmaltz³² notes the great frequency of complicating myocardial change in scarlet, for which we must constantly be on the lookout. Labbe³³ has made studies of the urine in scarlet and diphtheria. In scarlet there is a diminution in the amount up to the sixth day of the eruption, followed, then, by an increase. In diphtheria this fluctuation is not so marked. Urobilinuria is rare in scarlet, but is found in 87 per cent. of cases of diphtheria. Contrary to the generally accepted view, the author finds albuminuria to be rare in scarlet, even in the early stages, while it is very common in diphtheria. The diazo reaction is positive in 40 per cent. of the cases of scarlet, always negative in diphtheria.

Various reports on treatment with antistreptococcic sera have been made. Mackie³⁴ believes the serum to be of distinct value if given early. If, however, the first dose does not have a good effect the continued injection is not apt to be of value. Except for urticarial rashes, he has not seen any ill effects follow the injections. Heubner's impressions³⁵ in twenty cases are not so favorable. He believes that the treatment should be used only in severe cases, and early. The use of serum is contraindicated when there are multiple foci of streptococcic infection. Existing complications, endocarditis, arthritis, etc., are not affected by its use. Bokay³⁶ reports twelve cases treated with the Moser serum with good results, and Shaw³⁷ gives a complete review of Moser's work. With reference to the prophylaxis of scarlatinal nephritis, Buttersack³⁸ believes that urotropin is of great value. It should be given in appro-

priate doses, at the outset for three or four days, and again in the third week.

Diphtheria.—Prophylactic injections of antitoxin are lauded by Dubois³⁹. Over 700 cases (mostly of acute infectious diseases) were injected. No diphtheria developed, and for the first time in years these wards of the hospital are now free from the disease. Zuppinger⁴⁰ reports that of 1,000 patients exposed to diphtheria and treated by prophylactic injections, only eighteen developed the disease. Of these, eleven had evidently contracted the disease before treatment, as the symptoms developed at once. Concerning these prophylactic injections, Netter⁴¹ made the following statement at the International Congress of Hygiene: At the request of the Paris Pediatric Society over 11,300 prophylactic injections were reported from private and hospital practice. It is concluded that the injections confer an almost complete immunity, beginning twenty-four hours after the injections and lasting a month. All children exposed to diphtheria should receive injections, and in institutions these should be treated monthly, if diphtheria be prevalent, until the epidemic is thoroughly stamped out. The unanimous approval of the congress was had in the matter.

Concerning the bacteriological diagnosis, Czerno-Schwarz⁴² says that there are unquestionably non-diphtheritic forms of membranous angina, laryngitis and croup. The presence of the Klebs-Loeffler bacillus, on the other hand, without the clinical symptoms is not enough to warrant the diagnosis of diphtheria. Healthy carriers of bacilli may, however, fall ill at any time, and it is certain that they may carry infection to others.

Methods, value and dangers of intubation are studied by Fischer⁴³ and Fairbank⁴⁴.

The "accidents" after antitoxin injection have been studied by Coldefy⁴⁵. They consist of fleeting joint and muscular pains and skin eruptions. In tubercular patients, a severe febrile reaction may occur. No serious accidents have ever been proved to be actually due to antitoxin.

Comby⁴⁶ reports an interesting set of cases of diphtheritic paralyses cured by injections of antitoxin, offering an ingenious theory for its action.

Measles.—Variot⁴⁷ calls attention to the difficulty of diagnosis in atypical cases. Koplik spots have been found only rarely in his experience and in that of his colleagues. A mouth enanthem is, however, nearly always found, and this is a great aid. The rash is sometimes seen earliest in the parotid region. The purpuric form is not rare, and, *per se*, not so very grave. Mueller⁴⁸ finds Koplik spots in 80 per cent of his cases, but they are not pathognomonic, since they have been seen in roetheln. Nadoleczny⁴⁹ notes the great frequency of complicating otitis.

As a rule, though not always, this is benign. It is asserted by other authors, however, that 4 per cent. of deaf-mutism is traceable to measles.

Discussing the relation of measles and tuberculosis, Greze⁵⁰ says cases of pre-existent latent tuberculosis are usually aggravated, especially in early childhood, while manifest tuberculosis is always made worse by an attack of measles. Measles does not create tuberculosis, but it prepares the soil by its distinctive lesions and by the general weakness which it induces.

Reasoning by analogy from the good effects of the treatment of variola with red light, a number of Spanish clinicians⁵¹ tried the same method in treating measles. They report the procedure as being quite without value, and very disagreeable to the patient besides.

Whooping Cough.—Porak and Durante⁵² report an epidemic of pertussis in infants. Of ten cases, varying in age from one to ten months, seven showed pulmonary complications; two had congestion of the lungs, five had broncho-pneumonia. In view of the prevailing opinion of the high mortality of pertussis in very early life, it is noteworthy that *none* of these cases died, despite the complications. For the pertussis proper, treatment consisted in the use of belladonna and grindelia robusta. Eliza Root⁵³ calls attention to the fact that the mortality from pertussis is nearly as great as that from scarlet. Statistics from nine of the principal cities of the country showed 1,266 deaths from pertussis and 1,457 from scarlet in one year. She urges municipal control of this disease.

Among the therapeutic measures advocated of late by various writers may be mentioned: The use of an elastic abdominal belt by Kilmer⁵⁴, vaporized crude carbolic acid and formaldehyde by Melvin⁵⁵, and eypress of oil (20 per cent. alcoholic solution) poured on the clothes and pillows of the patient⁵⁶.

Typhoid.—Adams⁵⁷ gives a resume of 537 cases, seen in childhood in three decades. In half the cases the course is mild. Relapses are common. Intestinal antiseptics are of no benefit. Reliance must be placed on hydrotherapy and good nursing. The mortality, by decades, was reduced from 30.7 per cent. to 11.1 per cent. The average mortality for the series was 14.7 per cent.

Mumps.—Taschner⁵⁸ reports a peculiar set of cases. Four members of one family, aged eleven, nine, seven and five years, had mumps. All of these developed endocarditis.

Vaccination.—Goldman⁵⁹ has been vaccinating patients under red light and covering the arms with red dressings. He has obtained typical vesicles without the constitutional symptoms which were constant in the control arms. It has been shown that the strength of the virus in the glycerinated vaccine lymph diminishes rather rapidly. Therefore it is suggested⁶⁰ to use the lymph at least four weeks old in the first vaccinations so as to prevent too great a reaction, and to use only the freshest lymph for revaccinations.

Tuberculosis.—Behring's pronouncement that inhalation tuberculosis does not exist, that the primary infection always occurs in infancy and through the gastro-intestinal tract, continues to call forth a great deal of discussion. For a full review of this subject, the reader is referred to the department of pathology, in this issue. It may be noted here, however, that many observers have published studies, tending to controvert absolutely many of Behring's assertions. Thus Reyher⁶¹ shows that Behring's (and Dissa's) statement that the intestinal mucosa in early life is not fully developed, is not correct. Fluegge⁶² takes strong ground against practically all of Behring's assertions. Speck⁶³, basing his conclusions upon carefully compiled statistics, shows that milk infection can only play a small rôle in the origin of human tuberculosis. Westenhoeffer⁶⁴ thinks that infection through milk (and meat) cannot be of very great importance, even though the non-identity of human and bovine tuberculosis is by no means proven. Early childhood, about the time of dentition, is a time of great importance, for the child tends to put everything in the mouth, and infection through inflamed gums may thus easily take place. Cobb⁶⁵ thinks that the influence of milk in the spread of tuberculosis has been greatly exaggerated, because, in those countries where milk is used but little, or not at all, in infant feeding, and in others where it is always boiled before feeding, tuberculosis is just as prevalent as in countries where it is largely used. Hunter⁶⁶, in 5,142 autopsies in Hongkong, "in a population decimated by tuberculosis," found only twelve cases of intestinal tuberculosis, although 35 per cent. of the autopsies were on children under five years of age. As a result of his studies, Nathan⁶⁷ concludes that the view of Baginsky, that serous pleurisy does not stand in nearly as close relation to tuberculosis in childhood as it does in adult life, is fully justified.

Meningitis.—Squires⁶⁸ calls attention to the new diagnostic sign: rhythmic contraction and dilatation of the pupil, frequently present as early as the fourth or fifth day. It is elicited by alternate flexion and extension of the head on the spinal column, with the child in a horizontal position. With reference to Kering's sign, Miller⁶⁹ says that it is present in the large majority of cases, though it may appear late. While its presence in suspicious cases speaks for meningitis, its absence, especially in the early stages, does not negate the diagnosis. Koplik⁷⁰ says that the Babinski sign is not as common in the epidemic cerebro-spinal form as in tubercular meningitis. MacEwing's sign—a hollow percussion note over the anterior horn of the lateral ventricle—is also of more value in the tubercular form. Fundal changes are also more common in this form. Lumbar puncture is not a curative, though it is often a palliative measure, in addition to being of diagnostic value. Huber⁷¹ reports cases of otitis serous meningitis, where lumbar puncture appears to be of curative value.

Syphilis.—Francheschini⁷² says that histological examination of the cord may give valuable information in doubtful cases, the lesions here being usually restricted to the vessels, and often antedating other luetic lesions by great periods of time. Schwab and Levy⁷³ consider hypodermic injection, the best method of treatment, even at birth. They use an aqueous solution of the biniodide, beginning with $\frac{1}{2}$ milligram doses. Late hereditary syphilis is exhaustively studied by Abt⁷⁴.

Glandular Fever.—Trautman⁷⁵ says that this is only a symptomatic expression of infection of the naso-pharynx, of various types and not a disease sui generis.

Erythema Contagiosum.—Under this name, Escherich⁷⁶ has described an epidemic, contagious erysipelatoid eruption, in the faces of children, subjectively well. The eruption spreads over the body sometimes, may last six to eight days and is *not* followed by desquamation.

Rheumatism.—Winters⁷⁷ is still a believer in the chemical theory of rheumatism, holding that it is caused by non-neutralized products of proteid metabolism. Imperfect oxidation and defective elimination are important factors. Various authors^{78, 79, 80, 81} emphasize the fact that the arthritic manifestations are at a minimum, the cardiac at a maximum in the rheumatism of childhood. Schaeffer⁸² has treated six cases with anti-streptococcic serum, with good results.

DISEASES OF THE DIGESTIVE SYSTEM.—*Intestinal Autointoxication*.—Comby⁸³ has made a careful study of this condition. In general terms, it may be said that its etiology is to be found in constitutional causes producing either a diminution in the destruction or an increase in the production of enterotoxins. In the diagnosis special stress is to be laid on the urinary examination, an increase in the ethereal sulphates being pathognomonic.

Pyloric Stenosis.—Opinion is still divided as to the relative frequency of true hypertrophic and spasmodic stenosis. The English school^{84, 85}, inclines to the belief that in the great majority of these cases there is a true hypertrophy, only to be relieved by operative interference. Stamm⁸⁶ believes that many of these cases depend upon spasm, possibly at least partially induced by the hyperchlorhydria which is so often present. Mery and Guillemot⁸⁷ also express skepticism as to the frequency of the true hypertrophic form.

Summer Diarrhæa.—The bacteriology of this subject is still being carefully studied. So far as the Shiga bacillus is concerned, it is now settled that it is responsible for a certain percentage of the cases. There are, however, no definite clinical forms of enteritis, and no distinctive pathological lesions which are directly attributable to this group organism^{88, 89, 90, 91, 92, 93, 94}. Results of serum treatment have not been very satisfactory⁹⁵. Nobecourt⁹⁶ has studied the various forms of streptococcic enteritis. All forms, from simple catarrhal dyspepsia to the fulminating, true septicæmic types, may occur. With regard to the

edema so often seen, it is to be noted^{97, 98}, that this may occur independently of cardiac or renal lesion, as one manifestation of profound disturbance of metabolism.

Ekiri¹ to ⁹⁹, the discoverer of its specific cause, describes this disease, which is a form of epidemic entero-colitis, very prevalent in Japan.

Tubercular Peritonitis.—Recent evidence^{100, 101, 102}, tends to show that the results of medical treatment are *better* than those after laparotomy. This procedure should be limited to cases of the caseo-purulent form. In all cases medical treatment along the lines of modern treatment of tuberculosis should be tried first.

Appendicitis.—The difficulties of diagnosis in young children are everywhere alluded to.^{103, 104} The objective signs are all important, the subjective symptoms far less so. The general consensus of opinion with regard to treatment is well expressed by the dictum of Brannan: "No cases are operated on too early, many too late."^{7, 105, 106}

Epidemic Catarrhal Icterus.—Nicholaysen¹⁰⁷ reports an epidemic of 123 cases, mostly in children. It is regarded as a specific catarrhal affection, directly transmissible from person to person.

DISEASES OF THE RESPIRATORY SYSTEM.—*Pneumonia*.—Morse¹⁰⁸ says that lobar pneumonia is more common in infancy than is generally supposed, and gives an analysis of 118 cases. The mortality, excluding empyema, was 23 per cent. The younger the infant the graver the outlook.

Winters¹⁰⁹ thinks that the prognosis of lobar pneumonia in early life is excellent—much better than that of bronchopneumonia. Various authors call attention to the difficulties of diagnosis in early childhood, noting particularly the obscurity of the physical signs. The onset is often marked by intense abdominal pain, simulating that of appendicitis.^{110, 111, 112} Northrup¹¹³ has a timely article on treatment, insisting on fresh air, regulation of the bowels, water internally and externally, quiet and rest, and prevention of intestinal fermentation. He does not think that heart stimulation is always necessary; if it be, he relies on whiskey and strychnia. Dessau¹¹⁴ thinks that as pneumonia is a self-limited infectious process, antiseptic treatment should be employed. For this purpose he uses carbolic acid internally, a drachm of a 2 per cent. solution to a child of three every two hours. He uses hydrotherapy in addition. He reports excellent results.

Empyema.—Ausset¹¹⁵ calls attention to great frequency of empyema, complicating the pneumonia of childhood. It is often overlooked because of the obscurity of the physical signs. It is always to be looked for in pneumonia with delayed resolution. Prognosis varies with the form, least grave in pneumococcus, always serious in streptococcus and always bad in the tubercular variety.

Enlarged Bronchial Lymph Nodes.—Friedlander¹¹⁶ discusses the symptoms and physical signs of this very common condition. In ten cases

lymphocytosis has been a constant blood find and this may prove to be a sign of value.

DISEASES OF THE CIRCULATORY SYSTEM.—*Acute Infectious Myocarditis.*—Forcheimer¹¹⁷ says that this form of myocardial change is seen most often following diphtheria. Next to diphtheria, the process is seen most often as a result of influenzal septicaemia. Pathogenesis, symptoms and treatment are discussed.

DISEASES OF THE URO-GENITAL SYSTEM.—*Primary Pyelitis in Infancy.*—Hartwig¹¹⁸ asserts that this condition is not rare, that it often simulates typhoid. In doubtful cases its possible existence should be borne in mind.

Nephritis.—Fry and Martin¹¹⁹ in urinary examination of 100 infants under three months found albumen in nineteen cases (seventeen of which had casts), while fourteen had casts without albumen. Urid acid was abundant in twenty-six cases, twenty-three of which showed casts. Of these sixteen died under the picture of nephritis. The author regards the association as significant. A summary of existing views of interstitial nephritis in the young is given by Hirsch¹²⁰. Biedert¹²¹ urges routine examination of the urine in all the acute infections, especially bronchopneumonia. Morse¹²² reports a series of cases of nephritis from tonsillitis.

Enuresis.—Beilby¹²³ says that of seventy-five cases carefully studied, seventy-one were in boys. In all but four cases masturbation was practiced, a connection noted by Jacobi as long ago as 1876. Ostheimer and Levy¹²⁴ report ninety cases. Treatment employed was atropine, corrections of errors of diet, limitation of fluids in the evening and regulation of urinary hyperacidity. Lewis¹²⁵ advocates the withholding of all starchy foods at night. Cathelin¹²⁶ reports good results from his method of epidural injection, and Kapsammer¹²⁷ also reports a series so treated.

Nephrolithiasis.—Mousseaux¹²⁸ analyses fifty-seven cases of kidney stone in childhood. No special divergence from the picture as seen in adults is noted.

Diazo Reaction in Childhood.—Fischer¹²⁹ says that the reaction is positive in typhoid, acute miliary tuberculosis measles and typhus. In the other acute infections it varies. A negative reaction in the early days of a febrile condition practically excludes typhoid. A positive reaction speaks for the tubercular nature of a pleuritic exudate. A continued positive reaction is a bad prognostic sign in erysipelas and tuberculosis. A continuance of the reaction after the fifteenth day in typhoid indicates a severe case.

GENERAL DISEASES.—*Rickets.*—Sobel¹³⁰ and Koplik¹³¹ call attention to a sign of rickets (also described by Neurath), viz., a spindle-shaped thickening of the phalanges of the hand. Prechner¹³² gives a complete resume of existing views on rickets with bibliography.

Scurvy.—Rochon¹³³ believes that scurvy is on the increase in France. The almost universal practice of sterilization of milk is probably responsible for this, for prolonged sterilization certainly diminishes the soluble phosphates and citric acid, and destroys the ferments. Breast feeding and feeding of raw milk were not causal factors in any of the forty-three cases studied. Morse¹³⁴ reports a number of cases in which haematuria was the earliest or only symptom of scurvy in infants. He says that scurvy is the most common cause of uncomplicated haematuria in infancy.

Lenndorff¹³⁵ calls attention to the value of the X-ray to clear up the diagnosis in obscure, doubtful cases.

The most important larger work on pediatrics issued during the year is the second edition of Grancher and Comby's "Traite des Maladies de l'Enfance." Four of the five volumes have already appeared, and this international cyclopedia may fitly be said to be an epitome of the pediatric thought of today.

REFERENCES.

All references are for the year 1904.

1. Armstrong: Brit. Jour. Chil. Dis. March.
2. Chapin: Archives of Pediatrics, Aug.
3. Bunge: Virchow's Archive, pl. 85.
4. Levy: Th. de Paris. Arch. de med. des Enf., June.
5. Brush: 1904. Meeting A. M. A. and Section on Pediatrics.
6. Newton: 1904. Meeting A. M. A. and Section on Pediatrics.
7. Editorial Jour. A. M. A., July 23.
8. Report of Phil. Milk Commission: Archives of Pediatrics, April.
9. Edsall and Fife: N. Y. Med. Jour., January 9.
10. Stoeltzner: Jahrbuch fuer Kinderheilk., May.
11. Behring: Therapie der Gegenwart, January.
12. Price: N. Y. Med. Jour., February 27.
13. Halipre: Rev. Mens. des Mal. de l'Enf., September.
14. Backhaus: Therapie der Gegenwart, XLV, No. 7.
15. Cardamatis: Arch. de Med. des Enf., February.
16. Shaw: Albany Med. Annals, January.
17. Nobecourt and Vitry: Rev. Mens. des Mal. de l'Enf., March.
18. Poynton: The Lancet, August 13.
19. Jahrbuch fuer Kinderheilk., May.
20. Archiv. fuer Kinderheilk., vol. 39.
21. Friedlander: Lancet-Clinic, May 28.
22. Breclj: Jahrbuch fuer Kinderheilk., January.
23. Kilmer: Med. Record, February 27.
24. Jochmann: Zentralblatt, f. die Ges. Med., February 27.
25. Schamberg and Gildersleeve: Medicine, September.
26. Mallory: Jour. of Med. Research, January.
27. Editorial: Jour. A. M. A., January 1.
28. Dopfer: Soc. de Biologie, May 14.
29. Lauder: The Lancet, March 12.
30. Schamberg: Jour. A. M. A., August 6.
31. Uppenheimer: Jahrbuch fuer Kinderheilk., Aug. Ergänzungsheft.
32. Schmalz: Muench. Med. Woch., Vol. LI., No. 32.
33. Labbe: Rev. Mens. des Mal. de l'Enf., January.
34. Mackie: The Lancet, February 20.
35. Heubner: Berlin Klin. Woch., No. 41.
36. Bokay: Deutsch Med. Woch., Vol. XXX, No. 1.
37. Shaw: Med. News, October 29.
38. Buttersack: Deutsch Archiv. f. Klin. Med., Vol. LXXX., No. 3-4.
39. Dubois: These de Paris.
40. Zuppinger: Wien. Klin. Woch., Vol. XVII., No. 2.
41. Netter: Med. News, January 30.
42. Czerno-Schwarz: Archiv. f. Kinderheilk., Vol. XXXIX.
43. Fischer: Archives of Pediatrics, February.
44. Fairbank: The Lancet, June 20.
45. Coldefy: These de Paris.
46. Comby: Arch. de Med. des Enf., July.
47. Variot: Gazz. des Hop., January 14.
48. Mueller: Muenchener Med. Woch., January 19.
49. Nadoleczny: Jahrbuch fuer Kinderheilk., August, Ergänzungsheft.
50. Greze: Th. de Paris, Arch. de Med. des Enf., February.
51. Therapie d. Gegenwart, September.
52. Porak and Durante: Arch. de Med. des Enf., June.
53. Root: Pediatrics, February.
54. Kilmer: 1904. Meeting A. M. A., Section on Pediatrics.
55. Melvin: Colorado Medicine, February.
56. Soltman: Therapie d. Gegenwart, XLV., No. 3.
57. Adams: Archives of Pediatrics, February.
58. Taschner: Wien. Med. Woch., No. 31.
59. Goldman: Wien. Klin. Woch., September 8.
60. Editorial: Jour. A. M. A., April 2.
61. Reyher: Jahrbuch fuer Kinderheilk., July.
62. Fluegge: Deutsch Med. Woch., No. 8.
63. Speck: Zeitschr. fuer Hyg. u. Inf. Krank., Vol. 48, No. 1.
64. Westenhoeffer: Berlin. Klin. Woch. XLI., No. 7-8.
65. Cobb: N. Y. Med. Jour., August 13.
66. Hunter: Brit. Med. Jour., May 14.
67. Nathan: Archiv. fuer Kinderheilk., Vol. 38.
68. Squires: Med. Record, March 26.
69. Miller: Amer. Jour. Med. Sci., January.
70. Koplik: Med. News, June 4.
71. Huber: Archives of Pediatrics, January.
72. Francheschini: Gazz. degli Ospedali, XXV., No. 7.
73. Schwab and Levy: Annal. de Med. et de Chir. Inf., March.
74. Wisconsin Med. Jour., February.
75. Trautman: Jahrbuch fuer Kinderheilk., September.

76. Escherich: Muench. Med. Woch., No. 24.
77. Winters: Med. Record, January 9.
78. Burnet: Brit. Jour. Chil. Dis., September.
79. Sheffield: Post-graduate, September.
80. Landry: Th. de Paris, Arch. de Med. des Enf., April.
81. Coombs: The Lancet, February 27.
82. Schaeffer: Therapie de Gegenwart, XLV., No. 3.
83. Comby: Arch. de Med. des Enf., January, February.
84. Cautley: Brit. Jour. Chil. Dis., January.
85. Dent: Brit. Jour. Chil. Dis., January.
86. Stamm: Archiv. fuer Kinderheilk, Vol. 38.
87. Mery and Guillemot: Soc. d'Obstet., Gyn. et Ped., May 10.
88. Howland: Med. News, March 5.
89. LaFetra and Howland: March 12.
90. Park: 1904. Meeting A. M. A., Section on Pediatrics.
91. Knox: 1904. Meeting A. M. A. Section on Pediatrics.
92. Holt: 1904. Meeting A. M. A. Section on Pediatrics.
93. Rotch: American Medicine, May 7.
94. Tayler-Jones: Jour. A. M. A., July 2.
95. Zahorsky: St. Louis Courier of Med., March.
96. Nobecourt: Arch. de Med. des Enf., March.
97. Potter: Medical News, January 9.
98. Hutinel: Rev. Mens des Mal. de l'Enf., July.
99. Ito: Arch. fuer Kinderheilk, Vol. 39.
100. Goepfert: Arch. de Med. des Enf., August-September.
101. Missirocchi: Gazz. degli Ospedali, March 20.
102. Martin: These de Paris.
103. Erdman: N. Y. Med. Jour., March 19.
104. Brannan: Medical Record, April 30.
105. Spieler: Wien. Klin. Woch., Nos. 1-3.
106. Alapy: Arch. fuer Kinderheilk, Vol. 39.
107. Nicolaysen: Deutsch Med. Woch., No. 24.
108. Morse: Arch. of Pediatrics, September.
109. Winters: Arch. of Pediatrics, February.
110. Adolfo: Gazz. degli Ospedali, January 3.
111. Comby: Arch. de Med. des Enf., August.
112. Macdonald: Wisconsin Med. Jour., June.
113. Northrup: Med. News, April 30.
114. Dessau: Med. Record, February 13.
115. Ausset: Gaz. des Hop., March 17.
116. Friedlander: 1904. Meeting A. M. A., Section on Pediatrics.
117. Forchheimer: Arch. of Pediatrics, September.
118. Hartwig: Med. Record, March 19.
119. Fry and Martin: Arch. of Pediatrics, January.
120. Hirsch: Amer. Jour. Med. Sci., June.
121. Biedert: American Med., February 6.
122. Morse: Arch. of Pediatrics, May.
123. Beilby: Med. News, January 13.
124. Osteimer and Levy: 1904. Meeting A. M. A. Section on Pediatrics.
125. Lewis: Brit. Jour. Chil. Dis., February.
126. Cathelin: Presse Medicale, March 26.
127. Kapsammer: Arch. fuer Kinderheilk, Vol. 38.
128. Mousseaux: Rev. Mens. des Mal. de l'Enf., May.
129. Fischer: These de Paris.
130. Sobel: Med. News, February 13.
131. Koplik: Arch. of Pediatrics, October.
132. Prechner: Arch. fuer Kinderheilk, Vol. 39.
133. Rochon: These de Paris.
134. Morse: 1904. Meeting A. M. A. Section on Pediatrics.
135. Lehndorff: Arch. fuer Kinderheilk, Vol. 38.

ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

THE NON-TUBERCULOUS JOINT DISEASES.

For a number of years the medical mind has been dissatisfied with its understanding of the so-called rheumatoid diseases, a dissatisfaction which has increased by the knowledge that the nomenclature used gave no common ground on which to explain or exchange ideas. It is certain that very many different conditions have been called by the same name, and it is also certain that the same condition has been given very many different names. In order to establish some system in this chaos many have been working, the vast number of joint conditions known as the non-tubercular joint diseases, have been grappled with on all sides; pathology, bacteriology, chemistry and the Roentgen ray have, on the whole, helped much, though at times their evidence has been contradictory. We must be rid of such terms as "chronic rheumatism" and "gout," used to designate affections varying from the infection of a joint by the gonococcus to Heberden's nodes. During the last year much has been done in the way of putting forth knowledge accumulated

in the clinic and laboratory during the last decade, and the number of articles, as well as the different fields of work represented by the authors, testify to the fact that the light is coming through, that after a few minor points in classification are settled the work may go on aided by mutual interest and understanding.

Goldthwaite¹ divides the field into five types and has given us the essential characteristics of each type; briefly they are as follows: The first, *the chronic villous arthritis*, or "dry joint." This is a local process with no tendency to progression, and is usually seen in the knee. Crepitation or creaking of the joint on motion, pain and tenderness on use, catching and even complete locking at times, with increase in the joint fluid, are the symptoms. The condition is the result of strain and weakness, the joint membranes become lax and congested, are thrown into folds which, being rubbed over each other become more swollen and fringes or villi result, these in turn undergo fatty degeneration and lipomata are formed or calcareous degeneration may take place and the bony or cartilaginous masses known as "joint mice," develop.

The second type, *atrophic arthritis*. The etiology of this type is not known, it is a progressive disease resulting in marked crippling and distortion, in which the essential pathological feature is atrophy, an atrophy which involves the joint membranes, the cartilage, and the bones. Many joints or only one may be involved, the disease may extend gradually for years. The finger joints are usually involved early in the course, and the middle row of phalangeal articulations is first affected, spindle-shaped swellings with pain and stiffness, resulting in distortion and ankylosis.

The third type, *hypertrophic arthritis*. In this class the bones are thickened, this thickening taking place at the edges of the articular cartilages or at the attachment of ligaments. The formation of ridges or nodes which become ossified and interfere with joint motion, is the essential feature of this type. In the finger joints, Heberden's nodes typify the process. It may be local or general, the spine is frequently the seat of disease and the fusing of the vertebræ and intervertebral discs may be so complete as to result in ankylosis. During the active or irritative stage of this condition pain of extreme and persistent character is present; it is usually referred pain due to pressure on a nerve, such as sciatica, intercostal or brachial neuralgia. Exposure to cold, strain and injuries are undoubtedly factors of importance in the etiology of this type.

The fourth type, *infectious arthritis*. With this type of disease the symptoms are those of infection, varying in severity with the organism of infection. There is local inflammation, the joint is swollen, the capsules thicken, but there is no change in the cartilage or bone unless the process is of a destructive nature. The organism may be present in the joint, or as in the case of the typhoid bacillus, the joint process may

consist of simply a toxemia. These cases may result in adhesions, weak, unsteady joints, or where the process is destructive there may be true bony ankylosis.

The fifth type, *chronic gout*. This is a rare disease, the pathology of which is little understood. The essential characteristics are the deposits of urate of soda in the soft structures about the joint and some bone absorption adjacent to these deposits.

Here we have a definite field divided into five sections, the only difficulty remaining is to classify the individual case and place him in his proper square. That there may be difficulties in doing this is evidenced by the fact that Bradford² writes that where as yet we know nothing absolutely of the pathological process, he considers it better to use a single name for all these conditions—excepting, of course, infectious arthritis due to a known bacterial agent—and suggests as a name “*arthritis deformans*.” He considers this name better, as it does not assume a pathological basis and does not prevent necessary subdivisions. He promises us a full report on a long series of autopsy findings in the near future; he is being aided in this work by E. H. Nichols.

McCrea³ in an analysis of 170 cases, has gone over the pathology and etiology of arthritis deformans in a thorough manner and has made some interesting discoveries. As to the age of onset he found in 70 per cent. the onset was before forty years of age, and that in 50 per cent. it was before the age of thirty. This is clearly against the idea that these joint affections are the lot of old age. He came to the conclusion also that there are two great types of cases, the atrophic and the hypertrophic, which are varying manifestations of the same disease.

Morse⁴ has written that in childhood the atrophic and the hypertrophic forms of arthritis are rarer than in adult life, as is shown by the literature, Koplik being able in 1895 to collect but eighteen cases, and Moncorvo, in 1901, but forty-eight cases. Undoubtedly many other forms of disease were included in their series of cases. The disease described by Still in 1896, and known as Still's disease, he classifies with infectious arthritis.

Poynton⁵ has shown us how confusing the lack of a definite nomenclature is, he calls attention to the fact that we need to simplify our terminology. It seems that this would apply more especially to English writers on this subject, for in the British journals the confusion is so great that it is difficult to get any definite impressions.

Though the pathology of these affections, as well as the etiology of most of them, is still an unknown quantity, though many bridges must yet be built to carry us over differences of opinion, we have the comfort of realizing that the needed treatment has been made much clearer, and that the prognosis under treatment and without treatment is also clearer. Whatever ideas an individual may hold as to the scientific side of these cases, he [must admit that the therapeutics have made a wonderful ad-

vance. Skinner⁶, Goldthwaite and Kolipinski⁷ have written excellent papers on the treatment. It is to be hoped that the attention of the profession in general will continue to be directed toward these cases and that as in the case of the kidney, we shall come to a thorough knowledge of the lesions down to all possible refinements, and that no longer such a term as "chronic rheumatism" will be applied to the many different diseases of the joints.

Chute⁸ has pointed out the importance of making a diagnosis of hypertrophic arthritis of the spine in cases of urinary disease, many cases of supposed hypochondriasis or neurasthenia have had cause for their pain and have recovered when proper treatment has been applied to their spine.

CONGENITAL DISLOCATION OF THE HIP.

In order to justly criticise an operation having the character of the Lorenz operation for congenital dislocation of the hip, it is necessary that the element of time play a part. It has now been two years since the visit of Lorenz to this country and during the last year reports of most of the cases that came under his hand have been given to the literature. Papers have been written which have called out the best opinion in America in animated discussion. Adverse and favorable criticism both have been unrestrainedly expressed. The Lorenz operation has been placed under the microscope as it were and examined carefully and on the whole with fairness by those best able to appreciate its advantages and disadvantages. It would be strange if opinion were not affected by certain unpleasant characteristics of the tour of Lorenz through this country, but it is not evident in any of the critical discussions that have arisen on this subject that opinion has been materially influenced by personalities. The visit of Lorenz was the stimulus which has brought out the statistical reports and supplied us with the definite knowledge on this subject which was so much needed.

From the orthopedic staff of the Boston Children's Hospital⁹ has come a complete report of all the cases of congenital dislocation of the hip at that institution since it has been recognized that something could be done for these cases. This report covers a period from 1884 to the present time and is based on the observation of 144 cases. It includes ten cases manipulated by Lorenz, and shows the results of all known methods of treatment. It shows, too, how success has added to success and increased the field of usefulness of operation for this condition. Between the years 1884 and 1896, twenty-one cases were treated, seven by mechanical appliance without operation, twelve by open operation and curettage (Hoffa's early operations—two of them by Hoffa himself), and two by manipulation under an anesthetic. All twenty-one were failures. Between the years 1896 and 1902, fifty-four cases were operated upon; thirty-four of these were cut down upon with eleven successful, six unsuccessful and seventeen unknown results. Twenty were manipulated

with one success, seven failures and twelve unknown results. In the year 1902, twenty-two cases came to operation, an excess of one over the entire number treated in the twelve years before 1896. Of these twenty-two, two were operated upon by open incision and were both failures. The remaining twenty were manipulated, half of them by Lorenz himself. The results were eight successes, two failures, three relapses, and seven transpositions. In the year 1903, thirty-three cases were operated upon. On twenty-four of these a machine was used to aid stretching. The results were sixteen successful cases, five transpositions and three failures. Eight cases were manipulated with six successes, one transposition and one failure. One case was operated upon by the open method and was a failure.

Enough time has elapsed to make these results trustworthy, and most of the cases have been verified by skiagrams and the careful examination of unprejudiced observers.

The gratifying improvement in results here noted needs no further comment. Attention may be called to the fact, however, that there has been a steady gain on the side of manipulative methods as against the open operation. The broad view of this subject taken by the group of men making this report is apparent in this paragraph taken therefrom: "There is a certain analogy between the treatment of congenital dislocation of the hip and that of club foot. In the simple cases, manipulation under an anesthetic is sufficient. In the more resistant cases correction is helped by mechanical aids. In the oldest and most complicated cases, incision and osteotomy are often needed to perfect the cure."

Bradford, by long years of patient energy and devotion to this branch of orthopedics, has been able to give to us with the aid of his associates this valuable epitome. The mechanical stretching referred to in this report was accomplished by the "Bartlett machine," or the "Boston machine," an instrument devised by Mr. Ralph Bartlett, an attorney. This machine is a powerful traction windlass, so constructed that its outside bar presses directly on trochanter major. With it powerful traction is applied, the limb is pulled down, then the machine is abducted with the limb and the head lifted directly into the acetabulum. Bradford¹⁰ attributes the success attained in many cases to this contrivance, and has published a description of it during the year.

Ridlon,¹¹ in an article on the ultimate results of the bloodless operation, has taken up the claim of Lorenz that 80 per cent. of the manipulated cases show good functional results and that over 50 per cent. of the cases show anatomic reposition, and states that the anatomic replacements are not in excess of 20 per cent, and that the claims of Lorenz have led to bitter disappointment and unjust condemnation of earnest and skilful operators. He also gives to Paci, of Pisa, the credit of originating the operation, and is apparently of the opinion that what Lorenz has added to the method of Paci is of little importance. His

statements on percentage of success are based on the observation of 159 dislocated hips, ninety-four of which had undergone the manipulative treatment. Of these ninety-four ten showed perfect anatomic replacements. Lorenz himself operated upon twenty-nine of these with the following results according to Ridlon's report: Seven failures, thirteen anterior transpositions, six supracotoid displacements and the remaining three doubtful successes. He accounts for this difference in results with the claimed results of Lorenz as being due to the conditions under which Lorenz operated, and also to the fact that most of the cases did not receive the proper aftertreatment.

Lorenz¹² has written a paper which in part answers these criticisms, though he does not take up the discussion openly. He goes over the old ground, and states that he can see no way in which to improve his operation, that he does not approve of a machine to aid in stretching the contracted muscles, that too much importance should not be attached to the skiagrams of cases, for it is not uncommon for the skiagram to fail to coincide with functional results. He does not believe that the age limit can be raised, and closes his paper with the significant phrase, *nil perfectum sub sole*.

Mueller,¹³ the assistant of Lorenz when he traveled over the country, has taken up the statements of Ridlon openly, and first says that no one should confuse the methods of Lorenz and Paci, inasmuch as they are different, *vide* the fact that Lorenz reduction is accomplished by "ultra-physiological abduction," the head thus entering the acetabulum over its posterior rim, whereas the Paci movement brings the head in over the inferior part of the rim. He claims that the statements of Ridlon regarding percentage of anatomic restorations were made prematurely, and further states that he was able to recognize three cases that were reported in the Ridlon statistics as anterior transposition as being cases in which he conducted the after treatment and obtained anatomic repositions.

Horvath¹⁴ has reported fifty-seven cases. Fourteen of these were anatomic replacements, twenty-one were anterior transpositions with good functional results, fifteen are still under treatment, ten were failures to reduce, nine relapsed and eleven were lost track of.

This last year has been full of highly instructive reports and progressive work on this important branch of orthopedics and the results shown are very encouraging. It does not seem visionary, considering what has been done, to look forward with assurance to a day when the cases that are irreducible have closely approached the vanishing point.

TUBERCULOUS HIP DISEASE.

The most noteworthy piece of work on this subject has come from France. Calot¹⁵ (in a 230-page book) has taken up the subject thor-

oughly, going into all the refinements of diagnosis and treatment. Although there is nothing startlingly new or original in the book, there is much of interest; as, for instance, the chapter on the aspiration of hip abscesses and the chapter on osteotomy. The application of the plaster of Paris spica—the method of treatment preferred by the author—is described in the most painstaking way, and is full of valuable hints which might be applied to plaster of Paris treatment in general.

Freiburg¹⁶ has recommended an appliance for bed traction, the virtues of which are that the limb is held steady, and that the weight acts in extension practically as well as in theory. The only possible objection to the apparatus would be its cost. Freiburg¹⁷ has also called attention to Bier's "congestive method" in the treatment of joint tuberculosis, and has reported three cases where he employed the method with very satisfactory results. He recommends the method as an adjuvant to the resources long at our disposal. The technic of the treatment is to apply to the diseased joint a bandage which produces constriction and hyperemia. The congestion thus obtained should never be allowed to pass beyond the hot stage, and the patient should feel no pain whatever. The treatment should not be applied for more than an hour daily.

POTT'S DISEASE.

Taylor¹⁸ and Thronthike,¹⁹ writing independently, have called attention to the fact that statistical data on the question of the increase or improvement in deformity in Pott's disease is meagre. In the opinion of both of these observers more attention should be paid in dispensary practice to the recording of increase or diminution in the kyphos, and the jacket should be applied to the individual with due consideration of his own response to correction. The stimulation of interest along these lines will do much to improve the mediocre results that are now being obtained. Young²⁰ has described a very efficient apparatus for the treatment of upper dorsal and cervical Pott's disease. This consists of a cuirass made of felt or celluloid, which is constructed on a cast of the child's back; the mould for the cast is taken with the patient lying face down on a canvas hammock; the head, neck and trunk are included. The patient is secured in this by broad webbing bands. Wullstein,²¹ in an elaborate article on the treatment of Pott's, recommends an appliance very similar to this. He corrects the deformity on a machine, however, and applies a plaster. Using this plaster as a mould he makes his celluloid appliance, but joints it so that a greater or less degree of correction may be secured by screws at the will of the surgeon.

SCOLIOSIS AND ROUND SHOULDER.

Hoke²² has operated for the deformity, and his work (which involved many careful experiments, the designing of many special instruments,

and a series of operations on the cadaver and on animals) ended in a practical improvement which could not have been obtained in any other way. His operation, in brief, was to divide the ribs on both sides, and remould the deformed thorax to as nearly the normal conformity as possible. The difficulties encountered, the patience displayed on the part of the patient, and the ingenuity of the operator, all go to make this a remarkable piece of work. The operation would only be suitable in cases where the osseous deformity was evidently of such a nature that exercises and jackets could accomplish nothing. Lovett²³ has written again on the element of torsion in scoliosis. His method for applying corrective jackets is in theory the best, and practically, also, as shown by his results.

Lovett²⁴, in an article on the forcible correction of round shoulders describes an apparatus which exerts an accurately applied lever force in such a manner that there is no escape therefrom, the only question being how much correction is safe. He states that some mechanical stretching is necessary in round shoulders, the hope being to restore the dorsal spine to a more normal range of hyperextension and then to educate the muscles to hold the improved position.

PARALYSIS.

Poliomyelitis has been approached by Spitzzy²⁵ on the side of nerve grafting and an interesting field of speculation opened. He has given us the technic of his laboratory operations in neuroplasty and suggests that as nerve grafting is a method of operative treatment which does not interfere with the other methods of treatment practiced, it should be given a trial. That it may result in return of power, Cushing²⁶ has demonstrated in an anastomosis of the facial nerve for facial paralysis. Young²⁷ reports a case of paralysis of the anterior tibial muscle which was benefitted by an anastomosis of the musculo-cutaneous with the branches of the peroneal nerve which supply the anterior tibial muscle. He calls attention to the necessity, in an operation like this, for anatomic exactness and precision in recognizing the nerves.

Dane and Townsend²⁸ have published a series of fifty cases of paralysis of the lower leg (poliomyelitis) operated upon by several men, a sufficient number of years having elapsed since operation to justly judge the results. Tendon transplantation, arthrodesis and astragalectomy, were the operations done. The results would seem to show that tendon transplantation is not so satisfactory, except in carefully selected cases, as astragalectomy or arthrodesis.

Hoffa²⁹ writes that to get good results it is important to obtain the highest possible tension on the grafted tendon in an over-correction of the deformity, and to do this it is always better to correct the deformity before the operation. He recommends the following new operations. In spastic contracture of the forearm, in order to overcome pronation,

change the pronator radii teres into a supinator by transferring its origin from the internal condyle to the external condyle of the humerus. Transplant the trapezius to the position of a paralyzed deltoid in paralysis of the shoulder joint.

Gibney³⁰ reports the removal of the tensor vagina femoris in a case of spastic paralysis in order to correct internal rotation which could not be overcome by other procedures. The operation was at the time of report a success, but lapse of time will be necessary to judge its permanent effect. Clarke³¹ reports a case where he cut out on each side about an inch of the adductor longus and gracilis, with parts of the adductor brevis and magnus; also parts of the hamstrings and tendo Achillis for the relief of contractures in spastic paralysis. He thus secured a considerable relaxation of the stronger muscle groups and the case was much improved. Tubby³² has given a report of successful muscle grafting for paralysis. In the case reported the serratus magnus was paralyzed. He took a large part of the sternal portion of the pectoralis major, dividing the humeral attachment of this, the end was sutured with silk into the paralyzed serratus, with the result that power returned to the serratus. He has reported only one case, but the suggestion is a valuable one.

FOOT ERROR.

A statement from such a man as Gibney³³ carries with it an irrefutable amount of weight, even if it be of a revolutionary character, regarding the treatment of congenital talipes equino varus. Gibney has written that in his opinion the treatment in these cases has been begun too early, that until the foot becomes a weight-bearing, walking apparatus, attempts at correction and cure are of little avail, the results obtained not justifying themselves when placed in comparison with the pain and disturbance consequent on the treatment in young children.

Blodgett³⁴ has done one of the best pieces of work that has been attempted during the year. Up to the time of the appearance of this paper there were no reliable statistics on the subject of static foot error. He has gone over the treatment and the results of one thousand cases of flat foot, and put his conclusions into such form as to be easily available. His work covers three years and is decidedly praiseworthy. Some of the interesting points brought to light are (1) that 40.8 per cent. of orthopedic cases have static flat foot; (2) that two-thirds of the cases were under forty years of age; (3) occupation is shown to play an important part in the etiology; (4) cases are most frequent in the summer; (5) pain is most commonly localized at or near the astragalo-scaphoid articulation. As to the results of treatment, plate treatment was the most efficient. 32.7 per cent. were entirely relieved, 44.9 per cent. were relieved, 7.8 per cent. were slightly relieved, 13.6 per cent. were not relieved, .1 per cent. was made worse. The fact that it is nec-

essary to frequently change the form of support—no matter whether it be plate or plate substitute—is clearly demonstrated.

Bradford³⁵ has written on the relation of boots to humped foot or metatarso-tarsal valgus, and has shown that constricting shoes are responsible for this condition. The human weakness that prompts the buyer to purchase small and injurious shoes is responsible for this deformity and the remedy is readily prescribed, but not easily applied.

COXA VERA AND FRACTURE OF THE FEMORAL NECK.

Whitman³⁶ has called attention to the distinction between fracture of the neck of the femur and epiphyseal disjunction in early life. He divides the cases into three classes: (1) Simple, direct fracture of the neck, usually incomplete, occasionally complete. This class should be treated by putting the limb up in a plaster of paris spica at the limit of normal abduction. (2) Direct epiphyseal disjunction, usually incomplete, in rare instances complete. These cases should be operated upon and the head replaced. Removal of the epiphysis should only be done in case of necessity. (3) An indefinite class, in which the deformity is at or in close proximity to the epiphyseal junction. These patients are of a class that have the so-called static deformities of adolescence, and injury here is probably an aggravating rather than a direct cause of the distortion. Under this head coxa vera is included. Excision of a wedge at the base of the trochanter is the operation here to be employed.

Hoffa³⁷ states that epiphyseal separation is often mistaken for hip disease. He is inclined to place all cases of coxa vera under the head of epiphyseal disjunctions.

Moore³⁸ has written of his method for obtaining a bony union in fractures of the femoral neck in aged persons. He reports several very successful cases, and states that the reason why this class of patients is regarded as being beyond surgical aid is due to the fact that the proper kind of treatment has never been applied except in exceptional instances. There is nothing in the old person that is against bony union if the fragments are placed in apposition. In order to obtain apposition of fragment ends he anesthetizes the patient, flexes the thigh to lift the tendon of the psoas away from the seat of fracture and makes traction while bringing the leg down into a normal position. Fifteen to twenty pounds traction is then applied by weight and pulley. Ten to fifteen pounds pull is also applied to the upper and inner side of the thigh by weight and pulley. This side pull is the special feature that produces the good results, its action being to lift the upper end of the long fragment upward and outward, and by making the capsular ligament taut brings the short fragment into position. The fact that union has followed this treatment in a number of cases is of no small significance.

Painter³⁹ reports three cases of intracapsular fracture of the femoral

neck. In one case the fragments were wired together with silver wire; in a second the bone ends were trimmed off and the leg put up in 25° abduction. The fragments were apposed in the third and a ten-penny wire nail driven through to secure them. Good functional results followed all these operations.

Harting⁴⁰ defines coxa vera as a static deformity due to burdening the upper end of a femur weakened by rickets, trauma, tuberculosis or osteomalacia.

Froelich⁴¹ divides the cases into symptomatic and an essential coxa vera. In the symptomatic class there is hypertrophy of the neck, and the angle is very near the trochanter major. In the essential class the neck is not hypertrophied, and the angle is near the head. Reiner⁴² is of the opinion that coxa vera is an antecedent step in the deforming process which has for its end results the congenitally defective femur. Codivilla⁴³ recommends osteotomy at the neck, the seat of the deformity. He does not believe in the loss of any bone or that the operation should involve the coxo-femoral joint.

The visit of Professor Hoffa, of Berlin, to this country in the early summer of 1904, was an event of great interest and satisfaction. The character of the man is such that entertainments given in his honor were a long to be remembered pleasure to those who were fortunate enough to be present. He attended the meeting of the American Orthopedic Association at Atlantic City, and contributed much to the interest of that meeting. He operated and lectured in most of our large cities, and gave a lecture in the German educational exhibit at the Louisiana Purchase Exposition. He was accompanied by Dr. Hanz Spitzzy, of Graz, Austria. In passing, a word of comment is not out of place on the fact that this visit was not marred by an unpleasant newspaper notoriety.

BIBLIOGRAPHY.

1. Boston Med. and Surg. Journal, November 17, 1904.
2. Ibid.
3. Journal Amer. Med. Ass., October 8, 1904.
4. Boston Med. and Surg. Journal, November 17, 1904.
5. London Practitioner, June, 1904.
6. Journal American Med. Ass., October 8, 1904.
7. Medical News, September 8, 1904.
8. Boston Med. and Surg. Jour., November 24, 1904.
9. Boston Medical and Surgical Journal, July 28, 1904.
10. Amer. Jl. Orth. Surg., February, 1904.
11. Journal American Med. Ass., April 16-23, 1904.
12. American Medicine, June 18, 1904.
13. Illinois Medical Journal, October, 1904.
14. Zeitschrift fuer Ortho. Chir., Band xii, iv Heft.
15. Technique du Traitement de La Coxalgie, 1904.
16. Journal American Orthopedic Assn., October, 1904.
17. Ibid., August, 1904.
18. Jour. American Orthoped. Assn., October, 1904.
19. Ibid.
20. Journal Amer. Ortho. An., October, 1904.
21. Zeitschrift fuer Ortho. Chir., xii, 4 Heft.
22. Atlanta Journal-Record of Medicine, July and August, 1904.
23. Boston Med. and Surg. Journal, March 19, 1904.
24. Journal Amer. Ortho. An., October, 1904.
25. Zeitschrift fuer Ortho. Chir., xiii Band, 2-3 Heft.
26. Annals of Surgery, May, 1903.
27. Journal Amer. Ortho. Assn., August, 1904.
28. Ibid.
29. Ibid.
30. Jl. Amer. Orthoped. Assn., August, 1904.
31. London Practitioner, September, 1904.
32. Journal Amer. Orthopedic Assn., October, 1904.
33. Ibid., August, 1904.
34. Journal American Medical An., August 20, 1904.
35. Boston Medical and Surgical Journal, November 24, 1904.
36. Journal American Ortho. Assn., August, 1904.
37. Ibid.
38. Ibid.
39. Ibid.
40. Muencheuer Med. Wochenschrift, June 28, 1904.
41. Zeitschrift fuer Ortho. Chir., xii, Band, 1 u. 2 Heft.
42. Reiner: Ibid.
43. Codivilla: Ibid.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

The review of the literature on the subjects of Neurology and Pyschiatry will, in the main, follow the general scheme of division adapted in the review of last year. In addition, an attempt will be made to indicate the lines of thought that the discussions in the various special societies seem to follow in order that the more vital questions which are disturbing neurological thought in different parts of the world may be indicated. The review this year will be divided into the following divisions: (1) The reports of cases, or collection of cases and statistical studies, in which clinical questions of various kinds are treated. (2) Studies relating to the anatomy, physiology and pathology of the central nervous system, including especially the newer work on the neuron and its place in the mechanics of diseases and in the normal action of the nervous system. (3) Studies relating to the newer methods of therapy and of clinical and laboratory diagnosis. (4) A consideration of the most notable text-books and monographs which have appeared during the year.

There has been a pronounced absence in the past year of papers dealing with large collections of cases and statistical studies which depend for their effect upon the weight of numbers. There has been, on the other hand, a marked tendency towards the discussion of the place which certain variations in clinical types should occupy in our classification of nervous diseases. This is to be regarded as a helpful thing, as it points to a more careful consideration of symptoms and a broader conception of the types which disease may take. The inclination to this end may be illustrated by noting the renewed interest in the conception of neurasthenia and its real meaning and by the widespread attention with which the discussion of dementia praecox has been received throughout the neurological world. This subject alone took up a large share of the time of the English, German, French and American special societies.

A paper well illustrating the tendency referred to is that by Renyolds,¹ who calls attention to the aberrant types of multiple sclerosis. Such cases are often difficult to diagnose and more difficult to interpret. The occurrence of these unclassical types in families is an important fact, as it points to the idea that is more or less an increasing one, that the disease, multiple sclerosis is to be thought of as purely degenerative in character and not dependent upon trauma, infection or intoxication. If this is so, and it is just this, that the paper seems to prove, then we will be able in the future to regard cases, as multiple sclerosis which present disconnected symptoms depending upon a most unsystematic

anatomical distribution of lesions. It can be seen that one of the first results of the deeper conception of this disease will show itself in the depletion of the ranks of the so-called functional diseases by such cases that present symptoms enough to suggest the possibility of multiple sclerosis. Schiefferdecker and Schultze² have made a notable contribution to a group of cases which have been little understood up to this time. The disease of the muscle substance itself, as seen in cases of myotonia congenita, tetanie, paralysis agitans, etc., have until now had mostly a clinical interest, because the outlook from the study of the nervous system, microscopically, seemed altogether hopeless. This monograph is a good example of the better sort of work that is being done to-day in neurology. The purpose of the work is to investigate the finer anatomy of the muscle substance by special method by means of which the nucleus of the muscle cells can be clearly differentiated. The clinical histories of the cases are carefully given, and the muscles are sometimes studied from specimens cut from the living and sometimes from post mortems. There is included also a long series of experimental studies on animals for the purpose of throwing light on the anatomy of the normal muscle as shown by the improved technique devised by the authors. The conclusions which the authors are enabled to draw from this extensive piece of investigation are of the greatest interest. Only a few of them can be given here. For example, myotonia congenita appears to be based upon a peculiar diseased condition of the sarcoplasm as a result of which the fibrillae become affected. The hypertrophy of the muscle fibres and the increase in their nuclei appear to be secondary processes. There is a distinction between simple atrophy and atrophic degeneration, the fat disappears from the fibres before the latter process takes place.

In paralysis agitans not only the muscle fibres and the fibrillae, but also the spindles are diseased, while the nerve endings themselves in the spindles and in the muscles are apparently normal. In this disease a special relation of the pigment to the nucleus is found. These are only a few of the interesting findings in this remarkable piece of research. Of striking interest and importance is the relation of the histological changes in the muscle with the symptoms of the disease. The increasing importance of regarding nerve and muscle as intimately related is here shown, and a way is opened by this paper to a more definite understanding of abnormal conditions in which muscular symptoms are most in evidence. The point to be remembered is that the time is rapidly approaching when such a disease as paralysis agitans will not be thought of as a disease dependent upon senile changes in the spinal cord, but will be brought in relation with its chief group of symptoms, those referring to the muscular system. This is part of a tendency long ago brought out by Virchow in the dictum, "*Ubi est morbus.*" The most interesting contribution to the subject of tabes dorsalis, so much in

evidence in the review of last year, is less a matter of novelty in the sense that it is an addition to the knowledge than it is the last word on the aetiology by one of the foremost authorities on the syphilitic tabes question. Erb³ sets forth in his paper strong evidence in favor of his assumption that the most important cause of tabes is syphilis. The facts presented are so convincing that it would seem that the battle fought over this question for more than twenty years ought to be ended. The paper is an extensive one, going through four numbers of the JOURNAL. The additional material collected since his last publication on this question, that is since 1896, consists of four hundred cases belonging to the more educated classes. Of these, 88 per cent. gave positive evidence of a previous syphilitic infection, of the remainder only 3 per cent. gave absolutely no history of a previous specific infection. This small percentage may well fall within the limits of error which even a material wholly syphilitic might be expected to give. Erb goes with great detail into the objections advanced against his theory and exposes their weakness most convincingly; especially is this so in regard to the objection so often advanced by the opponents of the syphilitic theory, that is, the non-existence of tabes in syphilitically infected districts or where syphilis has become endemic. Bosnia, Herzegovina, Abyssinia, etc., were supposed to have no tabes, although the people there were syphilitic to a marked degree. Erb shows that in the latter country there are four times as many tabetics in a hundred nervous cases as are found in Vienna. He further proves that the statistics concerning the occurrence of tabes in these countries have been very inaccurate until the most recent times. He concludes with this dictum, which from his standpoint may be considered final: Tabes is without doubt, in by far the greatest number of cases, a syphilitic disease, but it is not yet definitely determined, but altogether probable, that it is the aetiological factor in all cases. Of scarcely less importance than this paper is one by the dermatologist Lesser⁴, on the same subject, from the standpoint of a dermatologist. The method followed in this paper is an admirable example of a fair and logical inquiry. Lesser points out that two questions are of paramount importance in a solution of the problem. First to determine what per cent. of tabetic *post mortems* show anatomical evidences of syphilis. Second to find out what per cent. of all syphilitics dying above the age of thirty-five years show anatomical evidences of syphilis.

In ninety-six cases of tabes, 28 per cent. showed unmistakable evidence of syphilis in the post mortem examination, while in only 9.5 per cent. of the cases of syphilitics over thirty-five years of age showed definite specific lesions in the post mortem examination. This simply means, and there seems no refuge from this conclusion, that syphilis and tabes are aetiologicaly so closely related that the fact cannot be controverted any longer. The question now lies more in the direction of the mode of ac-

tion of the syphilis than in the argument concerning the fact itself. In addition to statistical truths of this kind Lesser throws a good deal of light upon some new aspects of the pathology of syphilis. What he calls the interstitial inflammatory stage of syphilis, or the quartan syphilis, as illustrated by such post mortem findings as fibrous orchitis, syphilitically lobed liver, etc., show so many of the same characteristics as do the pathological changes found in the cord of tabetics that it is well nigh impossible to avoid the conclusion that the two processes are of the same or similar character. Lesser then takes up one by one all the objections that have been advanced against the syphilitic origin of tabes, and shows how weak they really are upon close analysis. He concludes his paper in this way: As soon as the fact can be admitted that tabes is a direct syphilitic disease, caused by the syphilitic virus in the same way that fibrous orchitis, syphilitically lobed liver, aneurism and smooth atrophy of the tongue, then there will be much less room for the endless discussion which has been so prevalent for the past ten years. The discussion of this paper before the Berliner Medizinische Gesellschaft was shared by Mendel, Benda, Hanseemann, Rothmann and others. There was in general an approval of the position taken by Lesser on this subject, as well as an approval of the results of Erb's long study. The importance of both of these papers lies, on the one hand, in the careful use of a large statistical material by Erb and on the other in the impulse that Lesser gives towards bringing the tabetic process in line with syphilitic alterations in other organs in the body, thus doing away in a measure, with the mystery which has always surrounded all discussion of the pathological changes in the tabetic cord. The question of infantile tabes noted in the review of last year receives additional confirmation by several contributions that have appeared in the past year. The importance of this subject consists first in the establishment of the fact of the occurrence of this disease in the young and second in determining the relation which it bears to hereditary lues. In this way it belongs to the syphilitic tabes question. Williamson⁵ describes three cases in two of which there were undoubtedly signs of hereditary syphilis and in the third such a condition was highly probable. Nonne⁶ reports the striking and unusual occurrence of a tabes occurring in a mother and two daughters, the former upon a syphilitic basis, the two latter having hereditary syphilis. This last contribution appears to point to a final settlement of the question, especially so as Nonne's reputation for careful clinical observation on just this class of cases is too well recognized to admit of a doubt as to its correctness. Gordon⁷ and Hegelstamm⁸ recount cases belonging to this group, the case of the former being highly complex, in that symptoms pointing to an early poliomyelitis were present. The heredo-syphilitic factor was undoubtedly present. Hegelstamm's paper deals also with dementia paralytica, the close association of which with tabes has now become an undisputed fact. The subject of myasthenia gravis,

one of the most interesting of all the newer clinical types of what for the present must be called functional diseases, has been enriched by a careful investigation of Hun, Bloomer and Streeter⁹. Their case was typical in every way and at the autopsy the nervous system was found to be negative, but there was a marked infiltration of the thymus gland and muscles with lymphoid tissue. The changes in the gland suggested lymphosarcoma. This finding is of some significance as it confirms to a certain extent some of the earlier work on the subject notably that of Goldham and of Burr and McCarthy, which were mentioned in a former review. There is in the paper referred to above, a very good bibliography and a resume of the pathological findings of the reported cases up to this time, which adds to the value of the paper. Oppenheim¹⁰, whose every word on the subject of myasthenia deserves attention, reports a case and draws especial attention to the importance of the eye muscle symptoms as one of the earliest diagnostic phenomenon of the disease. Long before the other symptoms are apparent they can be observed. In the case he describes there was a polydactylia and he notes the frequency with which congenital abnormalities are met with in his series of cases. Harris¹¹ shows that permanent palsy may sometimes follow a diphtheritic paralysis. When such a paralysis remains it is usually of the muscles supplied by one or more of the bulbar nuclei.

That a distinct type of bulbar paralysis may ensue, closely resembling in its distribution that which is familiar in myasthenia, is proven by this paper. It is to be distinguished from the latter by the non-variability of the symptoms, the absence of the myasthenic reaction, the absence of ptosis or of weakness of the jaw muscles or of the neck and extremities. It is also to be distinguished by the absence of attacks of dyspnoea, so characteristic of many cases of myasthenia, and by the presence of muscular weakness and reaction of degeneration. Always of interest is the possible relation of myasthenia to other diseases or its combination with them in the same individual. This always suggests the possibility of a common or, at least, a similar origin. Meyerstein¹² describes a case in which the usual myasthenic symptoms were combined with those of Basedow's disease. There is a marked tendency to see in myasthenia a disease that is due to some process in the body which can account for the extreme fatigue symptom. In this way it has been brought in relation with pregnancy and other conditions in which the assumption of a certain degree of toxæmia is present, and this latter finding of a complication with Basedow's disease may be of some interest. There are at least two papers on epilepsy that are of especial note, and deserve mention here, not because they have added anything new to our knowledge, but because they present the subject in a new light. They both enable us to think about epilepsy in a way that promises to bring results in the future. Starr¹³ discusses the problem of the functional character, and Clark and Prout¹⁴ attempt to prove by a study of

the anatomical changes found in cases dying in status epilepticus that the disease is truly one in which there is a definite pathological condition sufficient in degree to account for the symptoms. Starr bases his opinion upon a careful study of two thousand cases. This material is so large that any conclusion derived from it, for that reason alone, deserves attention. His argument is based upon the following: First, Jacksonian epilepsy is always due to some disease of the cortex; a sharp line between this and the so-called idiopathic epilepsy cannot be drawn. Second, in four hundred cases of maldevelopment of the brain 39 per cent. were subjects of epilepsy. Third, in the study of the cause of epilepsy such factors as alcoholism, heredity, tuberculosis and trauma are found. Now all of these produce, or can produce, definite changes in the brain. Fourth, although there has been as yet no agreement among pathologists as to the exact interpretation of the changes found in epileptic brains, yet all these alterations of tissue are significant of the fact that organic processes do exist, and that they are found in a fair proportion of brains that are examined.

From these facts Starr is of the opinion that the disease is a disorder of control overinherent energy. Its existence is proof of a weak and defective organization of the brain, and any lesion, no matter of what kind and no matter in what place, is capable of interfering with these mechanisms of control and of giving rise to the symptoms. Clark and Prout studied the brain of epileptics dying in status epilepticus, because this represents an essentially epileptic characteristic, and found a great number of interesting changes in the cortical cells, especially of the sensory layer. They interpret their findings in this way: First, epilepsy is essentially a sensory phenomenon, as the cells of the second and third layer are especially involved. Second, the essential lesion of epilepsy pertains to the nucleus of certain of the cortical cells, and is of such a nature as to seriously jeopardize the cell for considerable periods and ultimately cause its destruction. Third, chromatolysis is a nutritional change brought about by the nuclear toxemia. Fourth, the role of the leucocytes in the cortex after severe epileptic explosions is, most probably, that of a phagocyte. Fifth, the neuroglia overgrowth in epilepsy is one of the more remote sequences, and probably occurs in response to toxic irritation. The most suggestive paper on neurasthenia and the only paper on this subject of importance that has appeared during the year is by Dana¹⁵ on the partial passing of neurasthenia. In this paper Dana calls attention to the fact that in so far as neurasthenia is regarded as a psychosis, just so essential is it to consider it not as a definite diseased condition, but as being comprised of various psychical states of an elementary type. If these are followed out and carefully analyzed, it will be found that what remains of neurasthenia is a comparatively small number of cases of true fatigue neuroses. For the rest there is found to be the beginnings of paranoia, dementia præcox, and

various other psychical disturbances which may never pass beyond the stage of comparatively slight alterations in the mental make-up of individuals. These individuals generally show evidences in their past lives of a sufficient degree of neuropathic tendency to have marked them out as candidates for the development of a psychosis of one kind or another. It is to be hoped that the influence of this paper will be widespread. A conception so deep-rooted as this is should have one result at least, and that is to strengthen the tendency to differentiate sharply the various conditions which before were grouped in a most confusing way under this one head. The question of primary spastic spinal paralysis has been a matter of debate ever since Struempell, on purely theoretical grounds, believed that such a condition must of necessity exist. That his assumption was justified has been pretty well agreed upon, but what relation this condition bears to other certain well-known diseases of the spinal cord is by no means understood; therefore a paper by Struempell, who must be looked upon as a special authority on this subject, deserves always close attention. Struempell's¹⁶ paper this year is, in part, an answer to Leyden and Goldscheider, who, in the last edition of their text-book on diseases of the spinal cord in the Nothnagel series, deny that the disease, as a clinical and pathological entity, exists. This they maintain in spite of the paper of Erb's published last year and mentioned in the year's review. Struempell's paper contains an account of several cases of this disease with the post mortem findings in some of them. The main conclusion is, that there is such a disease as a primary spastic degeneration of the lateral pyramidal tracts, and that the condition deserves a place in our classification. He further finds that there are four varieties of the disease. The recognition of the varieties found may be regarded as the chief advance of Erb's paper over that of the preceding year. There is an endogenous variety of familiar and heredity origin, an infantile form, one which makes its appearance in middle age and an exogenous form, probably syphilitic in origin. This last is seldom a pure form of the disease.

On the subject of cerebral tumors, always a prolific source of neurological investigation, there is little to chronicle that would make for an advance in our knowledge. There is found, of course, the usual number of papers describing a single case, generally an operated one, with the localization more or less accurate. The subsequent history of these cases is seldom included in the article, and we are deprived of the chief interest which they now have for us, and that is, the reaction of the nervous organism to the tumor process and the effort made to relieve it. It must be remembered that at present cerebral localization in the majority of cases is by no means the difficult problem that it was, and especially has it become easier since the surgeon has consented to do the large flap operations. Mention should be made of the papers on cerebellar localization and on the cortical function in regard to the subdivisions of the

aphasias by Mills¹⁷. His conclusions are always of unusual interest, because they are based upon clinical observation of a material that is very large and very carefully studied. The attempt is being made, and with a constantly growing proportion of successes to localize in cerebellar growths, not only their absolute location there, but the portion of the cerebellum growth it occupies as well. Of more than passing interest is the emphasis Mills places on the symptom of muscular weakness in tumors involving the cerebellum. This is believed to be a part of the localizing data at our command. Fraenkel and Hunt¹⁸ have brought out with great clearness the existence of a variety of tumors of the brain which have not been adequately recognized, or at any rate have not been clearly understood until their paper appeared. These are the so-called acoustic neoromata involving the acoustic and facial nerves. These tumors are generally peripheral in origin, generally multiple, and are neurofibromatoses. The value of a knowledge of these tumors lies in the fact that they are, for the most part, located in the cerebellar pontine angle, and are, therefore, well within reach of surgical interference. Though such tumors seem to be favorably located for removal, yet the percentage of recoveries remains very low. This may be due to the fact that they were not recognized in time, or to the fact that we must be prepared to see a high percentage of mortality in all brain tumor operations for some time to come. J. Lepine¹⁹ reports two cases of tumors involving the acoustic; it is likely that these also were of the same variety as far as the localization is concerned. This paper of Fraenkel and Hunt should have as one result the overhauling of all of the operative literature on cerebellar tumors, as, without doubt, a certain proportion of them which are reported as being successful, were tumors of this kind.

The three following papers are selected because they throw additional light on some of the problems of tumors involving the central nervous system, though they do not bring out any absolutely new points. Nonne²⁰ contributes a very remarkable paper on a class of cases which have always eluded efforts to explain them. These cases occur frequently in practice and are lost sight of and put in the category of almost miraculous happenings. He refers to that class of cases which show every symptom of cerebral tumors including optic neuritis, and which after a year or less show a remarkable tendency to get completely well even to the clearing up of the optic neuritis. To this class belong, also, the cases in which after a careful localization operation is done and no tumor is found. After the operation the patient gets completely well and the cure is said to depend upon the relief of pressure, etc. The case histories in this paper are of extreme interest and the negative post mortem findings in some of them add to the perplexity of the problem. Nonne does not favor the assumption that the symptoms are due to an acute hydrocephalus idiopathic in nature. He offers no theory of his own in explanation. It is certainly a valuable thing to know about

these occurrences, and the whole question calls for earnest investigation. The role of trauma in the causation of cerebral tumors has always had a certain interest, especially to those who believe that trauma plays an important part in the etiology of many organic nervous diseases. Liefman²¹ contributes a case which helps to solve the question of the possibility of such a relationship. He shows in his case the direct anatomical connection between the trauma and the subsequently developing tumor. The trauma was on the skull and directly underneath it the tumor was found. This kind of evidence is much needed in this connection as well in all those conditions in which trauma is regarded as an important factor. To establish a direct anatomical connection between the two is worth more than any amount of theoretical proof. Cushing²², whose work on the surgery of the nervous system is becoming more and more of value to the neurologist, describes a case of successful removal of an intradural tumor of the cervical region. Aside from the very accurate localization, the chief point of interest in this paper is the emphasis that is given to the necessity of operating on this class of cases as soon as the diagnosis and localization can be made. Time must not be wasted in antisyphilitic procedures because no return of function can be expected if the pressure symptoms of the tumor have gone far enough to produce atrophy. The lesson to the neurologist is obvious and the delay of some weeks in the preliminary antiluetic treatment is often the difference between success and failure in favorable cases. As a contribution to the more exact localization of cerebral growths Phaler's²³ paper on the use of x-rays is important.

Thirty cases are described in which the x-ray was used and the conclusion is that most large lesions can be shown by it, but that no operation should be done on the evidence furnished by this means alone. It is to be noted that there has been a steady advance in the technique and the method of making use of the x-ray in this class of cases. On the subject of hysteria the number of papers that have appeared during the year has been very large. Most of them deal with unusual clinical manifestations of the disease without any attempt to explain their origin. Such papers are interesting enough, but they cannot be said to represent any especial advance in our knowledge. In the review of last year, mention was made of a new symptom complex called the Ganster symptom. The reason that this is so important is that though it is mostly confined to hysteria, yet it is found also in other psychoses. The relation which hysteria as a psychical disease bears to other better understood mental conditions might through this common symptom be more definitely determined. There are a number of good papers to be found and at least one considerable monograph. Hey²⁴ in his monograph brings the knowledge we have on the subject up-to-date. The symptom consists in the ridiculous answers given by patients to questions which they obviously understand and which they are able to answer correctly.

The interesting point is that never under any circumstances is the correct answer given. This, together with a peculiar condition of stupor (*dammerzustande*), makes up the symptom. It is found most often in hysteria and in dementia paralytica and also in epilepsy. It is not pathognomic of either of the first two conditions. Hey brings out for the first time in an explicit way the forensic importance of the symptom. The question of the differentiation between this and malingering is of importance for the reason that it is just this group of phenomena which is most commonly used in the feigning of insanity. Soukhanoff²⁶ calls attention to the medico-legal importance of recognizing the symptom and gives in addition a tentative explanation of its origin. Westphal²⁶ describes a case where the symptom followed or complicated a traumatic hysteria. Ganser²⁷ has a casuistical paper on the subject. Although the condition has now been observed very often and the literature has grown to considerable proportion, yet an adequate explanation of its significance has as yet not appeared. It is rather a strange thing that no American writer has contributed to the subject. A most creditable article on fecal vomiting and reversed peristalsis in functional diseases we owe to Weber²⁸ who has without doubt written one of the most valuable clinical articles of the year on hysteria. The case which the author mentions is of the greatest interest because a number of laparotomies had been done under the assumption that she was suffering from organic obstruction. In each case the abdomen was found to be normal. Some of the conclusions advanced by the author are worth remembering. They are as follows: That functional nervous vomiting is as much a symptom of functional brain disease as vomiting in cases of cerebral tumor is of organic disease, that fecal vomiting is only an exaggeration of the ordinary hysterical vomiting, that the vomiting in functional diseases may become more violent and more severe than it ever is in organic disease since fecal vomiting is scarcely known to occur in cerebral tumor and that active peristalsis is necessary before fecal vomiting can occur. In organic obstructive disease of the intestine the vomit is never fecal but feculent. S. Weir Mitchell and Spiller²⁹ report a case of hysteria in the male which lasted thirty years. The post mortem examination which included a careful study of the central nervous system showed nothing abnormal. This case is unique from the pathological point of view. The negative finding ought to settle for the present at least the absolutely unanatomical nature of the hysterical process.

To indicate in this review the progress of psychiatry or even mention the important papers, would extend its limits too far, so nothing more will be attempted than to note the important place which the subject of dementia paracox has come to fill in the neurological world. It is of interest to know that this subject formed the chief topic of discussion at the meetings of all the principal foreign societies, and at the meeting of the American Neurological Society the same emphasis was given to it.

The question at issue is, first, the justification of the term as descriptive of a clinical entity, and, second, the role of dementia in the psychoses of youth. The consensus of opinion seems to be that the term is by far too inclusive. This point of view is well shown by Meus,³⁰ who believes that the term itself is a poor one, and that the katatonic form of Kraepelin is only a variety of the same condition, which may manifest itself under the hebephrenic form as well. He suggests the term hebephrenic-catatonic-dementia. In other words, he does not wish to include the psychoses of youth as wholly within the degenerative class. On the other hand, Massalon³¹ believes that, inasmuch as the term has become recognized in its clinical aspect, and that investigators in other countries than Germany have found their material conforming to the type that Kraepelin describes, its value is too great to surrender. Stransky,³² in a very elaborate and careful treatment of the subject, in the preparation of which he made use of the large Vienna material, finds that the term has a very useful place, and should be preserved. Serbsky³³ concludes that instead of advancing our knowledge of the insanities of youth, the use of this term as Kraepelin devised it only serves to narrow it. He regards it as an artificial group, in no way unified, and comprising the most heterogeneous processes. Weygant³⁴ touches upon the question of the occurrence in older subjects. From these citations it can be seen that the subject of dementia praecox is still an unsettled one, and the term psychoses of adolescence seems to be more preferable than the rather limited term proposed by Kraepelin. The point brought out by Sachs in the discussion before the American Neurological Society is worthy of notice, to the effect that the term dementia carries with it in the dismal prognosis which it implies too hopeless a condition, when it is known that a certain proportion tends to recover, or, at any rate, to show no progressive loss of intelligence. This view was supported by cases observed by him over periods of ten years or more. A fitting ending to this part of the review might be made by reference to a stimulating paper by Edinger.³⁵ In this he elaborates a former theory of his on the importance of fatigue or overwork in the causation of many types of nervous disease of an organic nature. The simplest form of an employment neuritis up to tabes paralysis, optic atrophy, muscle atrophy and combined sclerosis, including most of the congenital types, form only one pathological group, with intermediate varieties, the relationship of which can be definitely shown. The toxin theory of the causation of nervous diseases is objected to on the ground that it is impossible to imagine that the toxine should show such a selective action as would be necessary to produce the variety of pathological findings. Under certain conditions work alone can lead to the destruction of nerve tracts. An idea such as this ought to be of help in opposing the tendency to use the theory of toxin as an easy explanation for the puzzling results of disturbed morbid actions resulting in diseased processes.

Putnam,³⁶ in his masterly address before the Congress of Arts and Sciences at the St. Louis Exposition on the value of the physiological principle in the study of neurology, among other things, places great importance upon the idea that disease is a physiological as well as a pathological process, and that as much weight should be given to the study of disturbed function as to disturbed anatomical relations, and that it is the new duty of neurology to investigate these phenomena. With these two papers in our mind the way to a deeper appreciation of the problems of nervous diseases lies open for us.

As we noted last year, the most discussed problem in the anatomy of the nervous system concerned itself with the neuron, especially as a result of the work of Bethe and of Nissl. This year the question, much in its original form, has received new impetus, due to the discovery by Cajal³⁷ of a new technique in the impregnation of nerve fibres, by which not only the terminal filaments can be shown, but also the neurofibrilla and the endocellular network around the cell. As might be expected, the announcement of a new and a comparatively simple stain aroused in the minds of the foremost investigators in the problems of neuro anatomy the desire to reconsider the data upon which the truth of the neuron had been supported or weakened in the light of the new method. Consequently, there has appeared a large number of papers, bearing the foremost names in neurology, on this subject. Only a few can be noticed here. Marinesco³⁸ finds in the results obtained by the new stain not only a proof of the truth of the neuron idea as originally conceived, but in addition a satisfactory explanation of the autogenetic regeneration of nerves as well. As is well known, this latter has always been one of the chief points which the opponents of the neuron theory relied upon for weakening the theory of the neuron. Not only has Marinesco made use of the stain in his study of the normal anatomy, but used it also in pathological studies and experimental work. The condition of the neuro-fibrilla gives, according to him, valuable data. This is pioneer work, and its value cannot at present be estimated. The scope of his work can be seen from the following: Lesions of the neurofibrillæ following ligature of the abdominal aorta: lesions of the neurofibrillæ caused by tetanus toxine, etc. Lehnosseck,³⁹ in a very carefully written paper, describes the method and gives his interpretation of the anatomical picture obtained. He finds that it supports, rather than weakens, the neuron theory and the contact hypothesis of nerve connection. Durante⁴⁰ shows in his article the main weaknesses of the neuron concept, and believes that the theory was formulated at a time when histology was in a rudimentary stage. For that time it was a useful enough hypothesis, and served to explain some complex points in the topography of the central nervous system. The unicellular conception of the nervous system which is implied in the neuron concept, must give way to the newer facts which progress in histology has brought

about. A polycellular conception conforms more nearly to the ideas at present in vogue. Bethe,⁴¹ whose work has been so great a factor in the development of the whole question, presents some of his views in a critical discussion. He suggests that the term *neuron* be retained merely as a teaching scheme for the ganglion cell, dendrite, axis cylinder, and nothing more, and that this term should not mean the structural characteristics of the whole nervous system. Van Gehuchten,⁴² in a casuistical article with a review of the literature, including Waldyer's original paper, concludes that the neuron as a cellular conception falls before the investigation of Bethe, and likewise is rendered untenable by the fact of the auto-regeneration of peripheral nerves. The point he emphasizes is that the neuron concept as a cell theory must be kept apart from the neuron doctrine as an embryological and physiological fact. Koelliker⁴³ makes a forcible plea for the neuron concept with these main propositions: First, nerve fibres spring from nerve cells of the central organ, which spread out in protoplasmic branching and end without connection with other cells. Second, by Cajal's latest method the axis cylinder ends with free branches about other nerve cells. Third, the neuron theory is correct. It is difficult to find out just what the new stain has done to strengthen or weaken our old conceptions. That it has stimulated anew research on one of the most interesting phases of the anatomy of the nervous system, can be seen from the papers just quoted and the authors who wrote them.

It is a point of great interest to observe how a new method that is really an advance in technique, and not merely a personal short cut of some laboratory worker, will always stimulate new and better work. The most noteworthy contribution of the year in the department of pathology deals with a problem that needs for its solution experimental evidence. It is by experiment on animals that the advances in neuropathology in the future must be looked for. Borst⁴⁴ deals with the question whether the specific nervous substance in the central nervous system following trauma, is capable of regeneration in an anatomical sense. This has been a mooted question for a long time, and the weight of evidence has seemed always to have been in the negative. A definite solution of this problem would be an event of great importance. Borst's work seems to go a long way to this end. By a series of the most painstaking experiments he finds that the neuroglia plays a very important part in the regenerative phenomena of the brain, and by means of its regenerative ability the continuity of the interrupted paths can be retained, that nerve cells do not arise by mitotic processes, and he concludes in the most positive manner that nerve fibres in the brain can, and do, regenerate. This is the important result of his work, and merits attention. Kennedy⁴⁵ adds further evidence to the fact that in a divided nerve the peripheral end shows regenerative power to produce new nerve fibres. The fact that there was a persistence of the axis cylinders in the focii of

multiple sclerotic patches, which has become one of the few positive conclusions in this disease, has again been the subject of discussion. Bielschowsky, Hoffmann and Bartels⁴⁶ came independently to the same conclusion, namely, that the axis cylinders found were not regenerated, but were the original ones. In the last review attention was called to some of the work that was being done at the London county asylums under the direction of Mott. The advanced character of this work was referred to. This year there is a paper by Tredgold⁴⁷ which is a good example of the kind of problems that are being investigated there. Three cases of multiple sclerosis were studied microscopically by him with the following conclusions: First, the initial change is in the myelin substance. Second, the axis cylinder persists for a time and finally disappears. Third, as a result, proliferation of neuroglia. Fourth, secondary degeneration takes place. Pathological conditions are suggestive of the presence of a circulating toxin. The apparent discrepancy in these findings and the ones just referred to, leave the whole question of the pathological findings in the disease undecided. There seems, however, to be more evidence in favor of the view which holds that the axis cylinders persist and that secondary degeneration is rare. Cognetto⁴⁸ found in two cases of hypophysis tumor only one showing the akromegalic group of symptoms. His idea is that the disease occurs through a primary metabolic process which stimulates the bones, the extremities, and especially the hypophysis to an active new growth formation. This is an altogether novel theory of the disease. Some years ago there was considerable attention given to some work of Nissl going to prove that certain poisons acted in a specific manner on the nerve cells, producing changes that were so typical that the kind of poison or toxin used could be told from the appearance of the nerve cell. Mourre⁴⁹ has offered experimental proof that Nissl's contention has no basis of fact. This is in line of some of the more recent work which tends to weaken the theory that the toxins of disease exert a specific and recognizable action on nerve cells. It is a pleasure to note that the optic nerve so important clinically in nervous conditions has aroused the attention of the pathologist. There are two papers worthy of attention in this respect. Fleming⁵⁰ studied the optic nerve in a case of optic neuritis, due to cerebral tumor, especially with reference to the neuroglia changes present. He finds that the changes found in cases of tumor are far greater than in optic neuritis, due to other causes, and he further believes that the optic neuritis, and with it the neuroglia changes, are not due to the abnormal pressure but to a toxic change in the optic nerve, and that the cerebro-spinal fluid is the agent which converts the agent. Leri⁵¹ studied the optic nerve in a case of tabetic amaurosis, and finds that it is caused by an interstitial neuritis, a syphilitic cirrhosis of vascular origin and a syphilitic meningitis. The study of the posterior root ganglion in tabes, has always held out hope for the solution of the ini-

tial lesion of this disease. Hauser and Thomas⁵² again attack the problem from this point of view, though their previous studies, published in 1902, were disappointing. By the use of a new and a much more delicate technique, they studied the cells of the ganglion in eight cases of tabes. They find atrophy of the cells and disintegration, even to total disappearance. In spite of the frequency and importance of these lesions, they find it difficult to indicate the role they play in the atrophy of the posterior nerve roots, but they are too constant not to be considered in the pathogenesis of tabes.

A brief paper by Raubitschek⁵³ should be mentioned as throwing some light on the reason for the absence of paralytic symptoms and of atrophy in cases of tubercular foci in the spinal cord and brain. He finds that the axis cylinders are persistent in the tubercular process even when it is of considerable size. This part of the review can be closed most fittingly by a brief reference to the larger aspect of the pathology of the nervous system which the problem of heredity from a biological point of view has inspired, as in the work of Beard⁵⁴ on the morphological continuity of the germ cell as a basis of heredity. In his paper before the section on psychological medicine at the British Medical Association, he attempted to extend to psychiatry the larger biological aspects of the question of heredity. This is to be most enthusiastically commended. As a part of the evidence of the importance of this aspect of Beard's work is the paper by König⁵⁵ of Daldorf, who, in a careful analysis of 3,329 cases of insanity, finds that the clinical data do not clash with the facts of Beard's investigation. It is very probable that this work and others of a like character will open to us an altogether new field of investigation into the origin and perhaps the cause of physical abnormalities.

On the question of diagnosis the greatest activity is found in the study of the cerebro-spinal fluid. The microscopical study of the fluid for the presence of lymphocytes as an aid to the diagnosis of tabes, meningitis, etc., was mentioned last year, and it was noted that little work on the subject was done outside of the French clinics. This year the number of papers that have appeared has been large, and they are from almost every well known clinic in Europe and in this country. Campbell⁵⁶, in a very readable article, gives a general resume of the subject, noting particularly the usefulness of the estimation of the osmotic tension in the fluid. This is particularly so in meningitis. A good bibliography is appended to the paper. Donath⁵⁷ has contributed several pieces of work in the chemical investigation of the fluid. These papers are of interest in that they offer a tentative explanation of the toxic character of the blood and fluid in epilepsy. For example, he has found in nineteen cases out of twenty-two, cholin in the cerebro-spinal fluid of epileptics of an idiopathic variety. In hysteria and neurasthenia he did not find it. In dementia paralytica tabo-paralysis the test was

positive. It is only fair to say that his findings have been criticised especially by Mansfield & Wilson. Dana's⁵⁸ experience in twenty-two cases confirms that of other observers, especially in regard to the presence of a lymphocytosis in general paralysis. Fraenkel⁵⁹ examined thirty-three cases with mostly positive results. Chautard and Boidin⁶⁰ give the results of a year's work in lumbar puncture in the service of a general hospital. The earlier results of Widal and his pupils were confirmed in the 223 punctures that were made, as far as tabes, paralysis, tubercular meningitis and zona were concerned. Nissl⁶¹ writes on the use of the lumbar puncture in insanity with the tabulation of 128 cases. He concludes that for the diagnosis of dementia paralytica the examination may be of some value, but that its general diagnostic importance is slight. He is distinctly opposed to the favorable reports of its usefulness in meningitis.

The whole question must be regarded as at present unsettled. That its value will be determined in the near future is very probable from the large amount of work that is being done. It is likely that the importance of a lymphocytosis will become less as the investigations of the chemical changes found attract more interest. Fuchs's⁶² investigation into the measurements of the size and the light reaction rapidity of the pupil in cases of nervous and mental diseases should be of some consequence to neurologists, for the reasons that his results are not in line with some of the notions formerly held on this point and for the reason that the rough clinical methods used by the average neurologist in his examination of the pupil has led to results that will not stand the test of more exact technique. The treatment of nervous diseases, as can be seen from the purely therapeutic papers, is developing along the lines of physical and physiological methods. Bianchini⁶³ writes interestingly of the utility of work in asylum practice, and notes the striking fact that those patients who show the greatest tendency to recovery and are the earliest candidates for discharge from the asylum are those to whom work comes most natural. Gerhartz⁶⁴ attempted to use the blood serum of epileptics in the manner devised by Ceni, but obtained the same discouraging results as others who attempted it. There is contained a sharp criticism of Larredde's book on the treatment of tabes and demential paralytica by enormous doses of mercury subcutaneously, and his theory of the metasyphilitic conception of these two diseases by Mobius in the general review on tabes in Schmit's *Jahrbucher*⁶⁵. Attention might also be called to a paper by Masoin⁶⁶ describing the colony treatment of the insane at Gheel in Belgium. This is the oldest insane colony known. The use of the x-ray in the treatment of certain nervous diseases has already been attempted; therefore, reference to Obersteiner's⁶⁷ experiments on the changes produced on the nervous structure of white mice when exposed to the action of x-rays are fitting. He found hyperæmia, hæmorrhages in the cord and meninges and encephalitic foci.

In the reviews of the preceding two years the new method devised by Toulouse and Riche^t of treating epilepsy by salt starvation and the substitution of the salt taken from the food by sodium bromide, was described with some detail, and the results of the treatment from various sources was given. There has been observed a gradually growing disinclination to use the method on a large scale, and the reports have become less and less and the successes have become fewer. During the past year only a small number of papers on this subject have come to the reviewer's notice. Turner⁸⁸ experimented upon female epileptics in a colony. These patients were very well known, and a record of their seizures and their mental condition were at hand for comparison. His results are interesting, and serve to explain the lack of enthusiasm in those who have a large material of epileptics under treatment. In five out of eight cases there was a diminution in the number of attacks. In three cases there was a lessened number of attacks for three months succeeding the treatment. In three cases the petit mal attacks increased in number. The mental condition showed no marked improvement. In four cases there was an increase of body weight. The treatment cannot be looked at in any way as a specific treatment of epilepsy, but merely as a relief of symptoms, the employment of which carries with it certain disadvantages, the chief of which is that the patients soon tire of it.

There have appeared during the year a notable number of monographs, a review of which would be in place here if space permitted. Mention, however, should be made of Jamin's work on the study of muscle in experimentally produced paralysis. One result of his work is likely to be a total revision of our former conceptions in regard to the electrical reactions of nerve and muscle. Mueller's monograph on multiple sclerosis is the most considerable addition to our knowledge on the subject since Redlich and Obersteiners' work some years ago. Camus and Pagniez's extensive work on the results and methods of the method of isolation pursued in the treatment of the neuroses in Dejerine's wards at the Salpetriere is very welcome and deserves to be read with attention, because here the rest treatment is carried out on a charity material with success. Dubois contributes in his book on the moral treatment of the psychoneuroses a very careful psychological analysis of the methods used by him with most unusual success. These two last works certainly fill out a gap in our literature of the therapy of nervous diseases. Freud's monograph on the psychology of everyday phenomena which are abnormal, but are scarcely considered so, is very good reading. Edinger's new edition of his well-known "Anatomy" is more valuable than ever, and Oppenheim's new edition need only to be mentioned to be praised.

Neurology and medicine in general has suffered the loss of three men in the last year that will be felt for all time. Weigert has in many ways made progress in the field of neuropathology possible by the dis-

covery of technical methods which are used by every laboratory worker. His work on "Neuroglia" will stand for a long time as the model after which investigations on the finer anatomy of the nervous system should be planned. Gilles La Tourette, in Paris, and Jolly, in Berlin, will be missed by many a student who found their teaching so illuminating.

The writer of this review feels bound to say, in closing it, that the amount of material at his disposal for selection was so large that double the space here filled would not be sufficient. If some of the lines of advance have here been indicated or only hinted at, the chief purpose of this paper has been fulfilled.

BIBLIOGRAPHY.

1. Some cases of family Disseminated Sclerosis. Brain, summer 1904.
2. Beitrage zur Kenntniss der Myotonia congenita, der Tetanie mit myotonischen symptome, der Paralysis agitans und einiger anderer Muskelkrankheiten, zur activitatshypertrophie und des normalen Muskelbaues. Deut. Zeit. f. Nervenheilkunde, January 4, 1904.
3. Syphilis und Tabes, Berl. Klin. Woch., January, 1904.
4. Zur Aetiology und Pathology der Tabes speciell ihr Verhaltniss zur Syphilis, Berl. Klin. Woch., April, 1904.
5. Hereditary Syphilitic Tabes, Rev. Neurology Psychiatry, June, 1904.
6. Ein Fall von familiarer Tabes dorsalis auf Syphilitische basis.
Tabes bei der Mutter und ihrer zwei hereditar syphilitischen Tochttern, Berl. Klin. Woch., 32, 1904.
7. Juvenile Tabes, N.Y. Med. Journal, page 872, 1904.
8. Tabes und Tabo-Paralyse im Kinds und Entwicklungsalter, Deut. Zeit. f. Nervenheilkunde, No. 26, March, 1904.
9. Myasthenia Gravis, Albany Med. Annals, No. 1, 1904.
10. Zur Myasthenische Paralyse, Deut. Med. Woch., 29, 1904.
11. Post-Diphtheritic Chronic Bulbar Paralysis and Its Distinction from Myasthenia. Brain, winter 1903.
12. Ueber das combinirte Vorkommen von Myasthenia und Basedowischer krankheit, Neurologisches Cent., 33, 1904.
13. Is Epilepsy a Functional Disease? Jour. Nerv. Ment. Disease, March, 1904.
14. Status Epilepticus. A Clinical and Pathological Study in Epilepsy. American Journal of Insanity, January, 1904.
15. The Partial Passing of Neurasthenia, Boston Med. Surg. Journal, 13, 1904.
16. Die Primaren Seitensclerose (spastische spinal paralyse), Deut. Zeit. f. Nervenhd., March 4, 1904.
17. Subdivision of the Concrete Concept Areas of the Human Cerebrum, Med. News, 19, 1904.
18. Tumors of the Ponto-Medulla-Cerebellar Space. Acoustic Neuromata Central Neurofibromatosis, Med. Record, December 26, 1904.
19. Deux Cas des Tumeurs de Nerf auditive, Rev. Neurologique, 22, 1904.
20. Ueber Falle vom Symptom Complex Tumor Cerebri mit ausgang in Heilung (pseudo tumor cerebri) uiber letal verlaufene Falle von Pseudo Cerebri mit Sections befund, Deut. Zeit. f. Nervenhd., 27, March 4, 1904.
21. Ein Fall von Hirn Tumor nach Trauma, Berl. Klin. Woch., 36, 1904.
22. Intradural Tumor of the Cervical Meninges, Annals of Surgery, June, 1904.
23. Cerebral Skiagraphy, American Jour. Med Sciences, December, 1904.
24. Das Ganzerische Symptom seine klinische und forensche Bedeutung, Aug. Hirschwald, Berlin, 1904.
25. Sur le Syndrome de Ganser ou le symptome complexus des Reponses absurdes, Rev. Neurologique, 17, 1904.
26. Deutsche Med. Woch., January, 1904.
27. Zur Lehre von hysterische Dammerzustande (Vorredeirend), Arch. f. Psychiatrie, January, 1904.
28. Fecal Vomiting and Reversed Peristalsis in Functional Nervous Cerebral Disease. A summary of Cases and Conclusions. Brain, part cvi, 1904.
29. A Case of Uncomplicated Hysteria in a Male Lasting Thirty years, with Post Mortem Examination, Jour. Nerv. Ment. Dis., October, 1904.
30. Signification clinique de la Demence Precoce, Annales Medico Psychologiques, February, 1904.
31. A Demence Precoce, Monograph.
32. Zur von Lehre der Dementia Praecox, Cent. fuer Nervenheilkunde Psychiatrie, January, 1904.
33. Contribution a l'etude de la Demence Precoce, Annales Medico Psychologique, January and February, 1904.
34. Alte Dementia Praecox, Cent. f. Nervenheilkunde, October, 1904.
35. Die Aufbrauch krankheiten des Nervensystems, Deut. Med. Woch., November 3, 1904.
36. The Importance of the Physiological Principle in Nervous Disease, Boston Med. Surg. Journal, December 6, 1904.
37. Trois modifications des usages differentes de la methode de coloration des neurofibrilles par l'argent, Comptes Rendus Hebdomadaires Societe Biologique, No. 8, 1904.
38. Nouvelles Recherches sur les Neurofibrilles, Rev. Neurologique, December, 1904.
39. Ramon y Cajal's neue Fibrillenmethode, Neurologisches Cent., 13, 1904.
40. A propose de la Theorie du Neurone, Rev. Neurologique, December, 1904.
41. Der heutige Stand der Neurontheorie, Deut. Med. Woch., 33, 1904.
42. Considerations sur la structure internal des cellules nerveuses et sur les connexions anatomique des neurons, Le Nervaxe, Vol. 6, January, 1904.
43. Ueber der Entwicklung der Nervenfasern, Anat. Anzeiger, January, 1904.
44. Neue Experimente zur Frage nach der Regenerationsfahigkeit des Gehirns, Ziegler's Belt-raege zur Path. Anatomie, Band 63, January, 1904.
45. On the Histological Changes occurring in Ununited Nerves, British Medical Journal September 24, 1904.
46. Zur Frage der Regeneration der nervenfasern in der Herden multiple Sclerose, Neurologisches Cent., No. 5, 1904.
47. Disseminated Sclerosis; an Account of the

Microscopical Examination of Three Cases, with Some Observations on the Pathogenesis of the Disease, *Rev. Neurology and Psychiatry*, July, 1901.

48. Zur Frage des anatomische Beziehung zwischen Akromegalie und Hypophysis tumor, *Virchow's Archiv*, Band 176, January, 1904.

49. Modifications structurales des cellules nerveuses consecutive a la administration quelques sustances toxique, *Societe Biologique*.

50. Optic Neuritis in Cases of Intracranial Tumor, with Special Reference to the Neuroglia Changes Present, *Rev. Neurology and Psychiatry*, July, 1904.

51. Etude de nerf optique dans L'Amaurose tabetique, *Nouvelle Iconographie de la Salpetriere*, May, 1904.

52. Les Alterations du Ganglion Rachidien chez les tabetiques, *Nouvelle Icon. de la Salpetriere*, March, 1904.

53. *Wiener Klin. Woch.*

54. A Morphological Continuity of the Germ Cell as the Basis of Heredity and Variation, *Review of Neurology and Psychiatry*, 1, 2, 3, 4.

55. The Problem of Heredity from the Psychological Aspect, *British Medical Journal*, October 15, 1904.

56. Lumbar Puncture, *Review of Neurology and Psychiatry*, January, 1904.

57. A. Hoppe-Seiler's Zeitschrift fuer Physio Chemie, Band 36, 6.

B. Die Bedeutung des Cholins in der Epilepsie nebst Beiträgen zur Wirkung des Cholins und Neurins zur Chemie der Cerebro-spinal Flüssigkeit, *Deut. Zeit. f. Nervhkd.*, 27, 1904.

58. On Cyto Diagnosis in Nervous Diseases, *Med. Record*, January 23, 1904.

59. Lymphocytosis of the Cerebro-spinal Fluid, *Med. Record*, January 23, 1904.

60. Un An des Ponctions Lombares, *Gazette des Hopitaux*, June 28, 1904.

61. Die Bedeutung des Lumbar Punction fuer die Psychiatrie, *Cent. fuer Nervheilke u. Psych.*, April 10, 1904.

62. Die Messung der Pupillengrosse und Zeitbestimmung der lichtreaction der Pupillen bei einzelnen Psychosen und Nervenkrankheiten, *Jahrbucher f. Psychiatrie u. Neur.*, Bd. 24, 2, 3.

63. Ergotherapie et Psychotherapie, *Nouvelle Icon. de la Salpetriere*, February, 1904.

64. Zur Blutserum Behandlung der Epilepsie, *Neurog. Cent.*, 18, 1904.

65. Neue Beobachtung uber der Tabes, *Schmits' Jahrbucher*, January, 1904.

66. An Account of the Care of the Insane in Belgium, Particularly Those in the Colony of Ghel, *Jour. Nerv. Ment. Dis.*, September, 1904.

67. Die Wirkung der Radium bestrahlung auf das Nervensystems, *Wiener Klin. Woch.*

68. Salt Starvation in the Treatment of Epilepsy, *Rev. Neurology and Psychiatry*, December, 1904.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. MCC. JOHNSON, M. D.

We are indebted to Kreissl for calling attention to the gross exaggeration of the efficacy of topical applications in the upper urinary tract as applied through the ureter catheter; it has its useful but very limited sphere. The same author calls attention to the fact that instead of repeated catheterization, in some cases it is of advantage to leave the catheter *in situ* for at least a week at a time. He demonstrates that it is harmless even if so maintained for several weeks. In certain forms of renal and ureteral fistula the catheter *a demeure* gives brilliant results.

Kelly says that the wax-tipped catheter has never failed him in diagnosing ureteral calculus, but in renal calculus, if the stone is lodged in dilated pouches, it may fail. In order to wax the catheter, two parts of dental wax and one of olive oil are melted together. The end of the catheter, or the whole of it, is dipped into this and allowed to cool in the air. He regards this method and the x-ray as complementary to each other, both being liable to error. The x-ray is not always convenient, is expensive, requires skill, is apt to burn, and often fails in very stout persons and uric acid calculi.

We are led to believe by Ayres that many cases of chronic discharges succeeding acute inflammations of the lower urinary passages are due to an unrecognized and untreated pyelitis. Pelvic lavage, with a weak solu-

tion of nitrate of silver, has been of immense service, not only in clearing up the pyelitis, but in curing a beginning nephritis due to it; and even parenchymatous nephritis may be thus wonderfully benefited.

A novel method for helping a stone to pass from the kidney to the bladder has been instituted by Schmidt. He injected sterile liquid alboline through a ureter catheter into the kidney pelvis and along the ureter as the instrument was being removed. Later the calculus was passed.

Holischer and Schmidt have modified Brenner's ureteral cystoscope so that both ureters may be catheterized at the same sitting, and both catheters may be left in, after the cystoscope is removed. It, furthermore, permits the use of catheters with injection attachment at the distal end.

Hunner calls attention to the possibility of infecting the other kidney with tubercle bacilli when ureteral catheterization is done in tubercular cases. He brings prominently forward that the first symptoms of renal tuberculosis may be expressed in bladder symptoms. While the disease of the kidney is compatible with a long life of comparative health, and in some cases there is a tendency to spontaneous healing, yet its treatment is pre-eminently surgical. Where the disease is bilateral, or in associated disease of the lung, the anesthetic is of great importance. Local cocaine anesthesia may be used for nephrotomy, and nitrous oxide gas for nephrectomy, nephrectomy or nephro-ureterectomy.

Recognizing the possibility of infecting the sound kidney in employing ureter catheterization, in order to prevent it, Vineberg, after exposing the orifice of the ureter with a Kelly cystoscope, surrounds it with the distal end of the instrument, and then, with a pledget of cotton soaked in an antiseptic, he cleanses the interior of the cystoscope and the mouth of the ureter before inserting the catheter. He finds that Voelcker and Joseph's indigo-carmin method of testing the functional capacity of the kidneys has been quite satisfactory. While it is Israel's practice to remove the ureter with the kidney in renal tuberculosis, yet the good results obtained by removing the kidney and leaving the ureter seems to justify this procedure. Strange as it may seem, primary nephrectomy for renal tuberculosis carries a lower mortality rate than when it is preceded by nephrotomy.

Decherd reports a case with two ureters to each kidney. The four ureters had separate pelvis and separate openings into the bladder. Cathelin collects fourteen cases from literature where the two kidneys are intimately interwoven, the one below the other, both on the same side of the vertebral column, and five cases in which the kidneys are thus situated, but entirely separate from each other, the ureteric orifices in the bladder maintaining their normal arrangement.

Denis informs us that complete absence or extreme atrophy of one kidney is found once in 2,650 cases; horseshoe kidney once in 1,000 cases; and fused kidney, exclusive of the horseshoe variety, once in 16,000 cases.

An extensive investigation of ascending renal infection, with special reference to reflux of urine from the bladder into the ureters as an etiological factor in its causation and maintenance, has been undertaken by Sampson. The vesical portion of the ureter changes under the various degrees of dilatation and of intravesical tension of the bladder, and in each of these conditions one may find special provision for guarding the lumen of the ureter, and thus preventing a reflux of urine from the bladder into the ureter. Under all conditions of the bladder, the direction of the current of urine from the kidney to the bladder is a constant factor in the prevention of ascending infection: so that a reflux of urine from the bladder into the ureters may be considered an etiological factor in the causation and maintenance of renal infection, only when the intravesical portion of the ureter is diseased, thus impairing its function, or when some ureteral abnormality exists.

The newer methods of diagnosing unilateral kidney lesions, such as cystoscopy, phloridzin test, etc., from the observation of Krotoszyner and Willard, are not to be relied upon *per se*; however, these (in conjunction with the older and ordinary methods of examination of the separate catheterized urine) should certainly enable us to get a fair idea of the functional value of either kidney, and to arrive at safe conclusions from our findings as to intended operative procedure.

A calculus in the ureter is a menace not only to health, but to life, and its removal is an operation of low mortality, provided it is undertaken before secondary changes appear in the kidneys. It may be extracted extra-peritoneally. The wound should be sutured by either catgut or silk. The x-ray, though the best means of locating stones, is in certain cases not *sufficient in itself*. (Tenney.)

Great hope for the cure of vesical tuberculosis is held out by Halle and Motz to those cases in which the lesions are limited, even though they be ulcerated deeply. If the lesions are diffuse there is a different prognosis. The curative treatment consists of internal medication combined with, in some cases, topical applications and surgical procedures. The fact that after the removal of a tubercular kidney, the vesical symptoms and lesions often disappear, has of late been prominently noticed. Especially in painful and hemorrhagic bladder lesions, even though the renal or prostatic foci are untouched, curettage and cauterization followed by active and prolonged topical applications, relieve the active symptoms and may arrest its further progress.

Hubbard is unable to account for the fact that after renal decapsulation one patient should survive and be greatly benefited, another survive with the progress of the disease not arrested, while the third quickly dies. Out of seven cases two seemed to be progressing towards cure.

Edebohl admits that after decapsulation a new capsule forms about the kidney within a space of a few months, and while he says it is more vascular and less tough than the original, the consensus of opinion of

other writers who have approached the subject, either experimentally or in actual service, is that the secondary capsule quickly forms, is no less tough than the original, and its vascular supply is not more generous than the former capsule.

Of nine cases of decapsulation operated upon by Balch, one case only is probably cured, one eleven months after operation is still gaining, and two, a year after operation, show very little, if any improvement.

Freeman suggests that a prominent cause of renal hæmaturia, which is often unilateral, is chronic interstitial nephritis, and that decapsulation in these cases offers a good prospect for cure of both the hæmaturia and the nephritis. He reports one case apparently relieved in this way.

Two years after doing a double renal decapsulation the patient developed anuria convulsions, and when he had but a few hours to live. Edebohls did a redecapsulation which started the urine to flow, but was done too late to counteract the uremia. He advises the removal of the kidney capsules for any one who has a reasonable expectation of life of not less than a month without operation, provided there is a clear and unequivocal establishment of the diagnosis of chronic Bright's disease; that there is an absence of absolute contraindication to any operation; and that the surgeon is reasonably familiar with surgery of the kidney—claiming that even marked changes in the heart and blood vessels disappear after it. However, those cases with albumenuric retinitis have been very discouraging to the author. He believes kidney decapsulation properly applied is almost a certain cure.

Suker, who has undertaken an investigation as to the advisability of operating upon cases of chronic Bright's disease with retinitis or neuroretinitis, with or without hemorrhages, has come to the conclusion that it is absolutely contraindicated.

In an extensive and admirable paper upon the subject, Elliott gives a broad-minded view of chronic Bright's disease. According to him, it is a diseased condition of the entire system, is of very gradual development, and in a great majority of cases has existed for months and years before the case comes under observation. There is a chronic toxæmia which produces widespread arterial and cardiac degenerative changes, and it is to these that are due the most threatening elements of the disease. It is to the failing heart that is, in a great measure, due the dropsy and terminal anuria and uremia of chronic nephritis; so that the therapeutic problem is a question of sustaining a failing heart. Chronic nephritis is a disease of slow and spasmodic development, with exacerbations and remissions such as to sometimes simulate a cure. That the general condition of the patient improves after the decapsulation is nothing more than what we may get from hygiene and rest. The fact that a tougher capsule sometimes develops after decapsulation may account for the many relapses and deaths within the first three and one-

half months, and, at least, narrows the prospect of improvement to a period of months.

Ferguson finds that the mortality from renal decapsulation is 9 per cent., and infers that when the limitations of the operation are more clearly defined, and the operation performed earlier, the mortality will be much reduced. He compares the condition of the kidney in acute inflammation to the phlegmonous inflammation of the hand, where free incision promptly relieves the tension and liberates the imprisoned poisonous materials. As the symptoms and signs of nephritis in cases of floating kidney are indicative of a true nephritis, and a floating kidney is a frequent cause of chronic nephritis, by constantly interfering with its vascular supply, nutrition and free excretion of urine, and, furthermore, in his experience, cases which in the beginning did not give any disturbance to the patient later had to submit to operation because of painful and annoying symptoms, he is convinced that floating kidneys should be treated by decapsulation and fixation.

Hall and Herxheimer experimentally produced acute nephritis upon rabbits, and noted the effect of decapsulation in these cases. They found that decapsulation means the removal of a portion or the whole of the capsule, with more or less laceration of the cortical tubules and hemorrhage, and the exposure of a raw absorptive surface. Eight to fourteen days after the operation the kidney is surrounded by a thick, strong, connective tissue capsule. They suggest that what improvements follow decapsulation may be due to action upon the sympathetic ganglia, and that simple reni-puncture, instead of a complete decapsulation, may take its place, relieve tension and promote renal functions.

Following the experimental decapsulation of kidneys in rabbits and normal dogs, Gifford finds that in all cases over two-thirds of the capsule had been removed by the operation, and that in either normal or diseased kidneys there is an increase in size of the kidneys after decapsulation, persisting for a month at least; also congestion, most marked in the intertubular blood vessels in the cortex. However, the renal epithelia remain intact. A new capsule, at first vascular and quite thick, is very distinct at the end of eight days, which at the end of six months returns approximately to the normal thickness and vascularity. No new blood vessels are formed which anastomose with those of the kidney.

It is suggested by Ruggi that the kidneys possess the power of internal secretion, and in movable kidney, which, on account of its excursions, has a disturbed circulation, there is thus a modified renal secretion, and an alteration of the trophic nerve and the central nervous system, so that a general neurosis is set up.

Leguen reports three cases in which an abnormal disposition of the blood vessels of the renal pedicle caused pressure upon and obstruction to the ureters—hydronephrosis.

In 10 per cent. of his cases of nephropexy Taylor found unsuspected lesions, so he regards it as not uncommon for a movable kidney to be the site of some lesion. Therefore, if the movable kidney gives definite symptoms, a well-performed nephropexy should be done.

Leguen gives his attention to the influence of pregnancy upon a previously healthy kidney, as well as upon an already existing pyelonephritis, and recommends premature induction of labor where the pyelitis is bilateral and the symptoms sufficiently intense to necessitate intervention. If the disease is unilateral, nephrotomy is justifiable in the first seven or eight months of pregnancy. Later, premature labor should be induced.

According to Thorndike, in prostatic hypertrophy the catheter has a wide range of usefulness, but should be discarded at the moment when it ceases to palliate, and not after months and years of further unavailing struggle to make it so. The Bottini operation should not be classed with the more radical enucleations, but is an efficient palliative procedure, having its own appropriate use.

Telluride speaks of the advantage of preliminary perineal drainage in desperate and debilitated cases, the prostate being removed at a second operation.

Watson tells us that Gouley was the first to deliberately and clearly formulate a plan for the removal of the entire gland from the perineum, while Albarran appears to have been the first to introduce the prostatic tractor. Watson's choice of operations are these: First, the perineal prostatectomy; secondly, suprapubic operation; then the Bottini, and, finally, perineal and suprapubic drainage.

Meyer thinks that the catheter should no longer be advised as a routine measure, and as soon as its regular use is necessary it is time for a more radical procedure, perineal prostatectomy being the method of choice. It is the patient's general condition, not his age, that furnishes the contraindication to operation. He is an advocate of spinal anesthesia, if the effects of a general anesthetic are feared. The Bottini operation yields excellent results.

According to Mr. Freyer, the prostate is composed of two glands almost as separate and distinct as the testicles, which empty through their ducts on each side of the caput gallinaginis. They are surrounded by distinct capsules which are fused together in the median line. In the operation advocated by Mr. Fréyer these glands are enucleated suprapubically by means of the index finger introduced through an opening over the most prominent projection of the prostate into the bladder, usually leaving the prostatic urethra, but sometimes injuring it. Of the 110 cases reported by him three were cancerous, leaving 107 of adenomatous prostates. Of these ninety-seven were completely successful. In another article Mr. Freyer gives in detail the after treatment employed by him.

Walker says that the third lobe of the prostate is a misnomer, for it is nothing more than a projection, pedunculated or otherwise, from either one lobe or the other. The modification of the sexual function depends upon how much injury is done to the ejaculatory ducts. The sexual function once learned is rarely ever lost entirely. Cancerous enlargement of the prostate is not infrequent. The perineal and suprapubic routes are preferred, although the electrocautery, as advocated by Chetwood, is of service in the hands of some.

Horwitz believes that the attempt made by other operators to save the ejaculatory ducts is illusory, and that the Bottini operation is the one of choice in suitable cases. Of the prostatectomies he prefers the perineal method as advocated by Bryson. The dangers attendant upon daily catheterism are considered greater than those of radical operation performed at the onset of the symptoms caused by the obstruction. The proper time to perform a radical operation is reached as soon as it becomes necessary for a patient to resort to daily catheterism.

According to Wiener, by the use of laughing gas and rapid work there seems to be practically no contraindications to suprapubic prostatectomy. The less instrumentation to the urethra and bladder before the operation the better for the patient and surgeon; so that previous to the operation the author allows a patient's urine to accumulate in his bladder for about twelve hours in order to distend it, when the operation of Mr. Freyer is done. All the contraindications usually mentioned are not for the operation, but for the administration of ether or chloroform. He rarely takes more than twelve minutes to perform the operation, which has a mortality of 4 per cent.

Syms inveighs against the use of the cystoscope and metal catheters in prostatic hypertrophies, believing that it is safer to do a perineal section on the patient at once than to subject him to prolonged manipulation to enter the bladder. All previous manipulation of the bladder to operation is regarded as harmful. The indications for operation are, frequency, pain, cystitis, hemorrhage, catheter life, stone, residual urine (extreme), dilated bladder, contracted bladder. The Bottini operation is objected to, as well as the suprapubic route for prostatectomy. Syms again calls attention to his method of doing prostatectomy.

Fuller speaks of the passing of the makeshifts gotten up to take the place of the radical operation, due to unsatisfactory results from them and the increasingly better results following prostatectomy. He considers the suprapubic route, the perineal cystotomy and perineal dissections, the aim being to avoid opening the urinary tract or rectum. He seeks to select that method most suitable for the case. The perineal dissection will never be generally adopted, because of the time consumed and the surgical mishaps (tearing urethra, rectum), and besides it does not provide drainage for inflammations and infections of the urinary ways. Perineal cystotomy is applied in a certain number of cases,

especially those where the enucleation is not difficult, being those cases where the capsula propria of prostate is not adherent to the surrounding capsule; but when there is a need of complete rest and drainage of the bladder (foul cystitis, hemorrhage, phosphatic calculus), a suprapubic opening allows this better. He is accustomed to making perineal vent also in order to establish perfect drainage. Fuller claims that Mr. Freyer's operation is essentially the same as published by him in 1895. Three hundred prostatectomies with 5 per cent. mortality, if uremia cases excluded, are reported.

Goodfellow utters a word of caution as to the use of instruments in cases of prostatic hypertrophy. He describes his own method of doing perineal prostatectomy, and reports seventy-five cases, with two deaths. He calls attention to and gives in detail three cases of syphilitic enlargement of the prostate which yielded to specific treatment, and suggests that possibly a larger proportion of enlarged prostates than heretofore supposed are sequelæ of syphilis.

Walker finds that the prostate has a capsule of its own, which surrounds it and sends partitions into it, and to which it is intimately attached. Around this capsule, which is called the capsula propria, is another capsule made up of the pelvic fascia. In hypertrophy the capsula propria is thickened, and thus more individualized. From the findings at the autopsy of four cases operated upon after Freyer's method, the prostatic urethra was torn at the veru montanum, the ejaculatory ducts remaining as a tongue-like projection.

Motz and Arrese find in those cases which have urinary symptoms of prostatic hypertrophy without any enlargement of the gland, the vesical atony is not caused by the bad state of the muscular tissue, and that the extirpation of the gland, which, at least in appearance, could form no obstacle to the emission of urine, can re-establish the normal function of the bladder with individuals who have had complete retention.

Pousson says that cancer of the prostate and bladder develop independently of each other in the majority of cases, and while the mortality up to the present time of cases operated upon is 31.8 per cent., he suggests that an enucleation undertaken earlier will bring better results. Out of three cases of his own which he has been able to follow, one was in good health, and completely emptied his bladder nine months after operation.

Vanverts calls attention to torsion of the spermatic cord, which produces a congestion of the testicle and epididymis, and is very rapidly succeeded by intratesticular and intra-epididymal hemorrhage, which is fatal to those organs. In about one-fourth of the cases, cure occurs from spontaneous readjustment. It is when the testicle is in an ectopic state, and the tumefaction is in the inguinal canal, that diagnosis is difficult and relief, by attempt to untwist the cord, is impossible; therefore, operation at an early hour is called for.

Revel reports three cases of nocturnal incontinence of urine lasting from infancy, which he cured by injecting an artificial serum between the rectum and the sacrum.

Cathelin again calls attention to the advantages of his segregator.

Millet says the cystoscopes which are constructed for air dilatation of the bladder may be used with water inflation, and offer the advantage that through the air tube a stream of water may be directed into the bladder, and the bladder repeatedly irrigated for the purpose of washing away blood clots, etc.

Berg proposes a radical operation for malignant neoplasm of the urinary bladder. Here he opens the peritoneum behind the symphysis pubis, and, after raising the peritoneum from the pelvic floor, dissects out the glands and lymphatics along the internal iliac artery, together with the surrounding loose cellular tissue, dividing the ureters if need be, and afterwards transplanting them into the bladder fundus. As much of the bladder wall as indicated may be excised and the remaining portion sutured. Perineal drainage of the pelvic floor through the perineum is used.

Herring has obtained good results in cases of vesical papilloma by irrigations of silver nitrate solution in gradually increasing strength, and says there is reason to hope that papillomatous growths may be entirely destroyed by long-continued applications of this solution.

Berg reports a unique case of ectopic testicle in which the right testicle was at the left internal ring, where a hernia existed; both cords were intimately connected with the hernial sac. The scrotum showed no evidence of division into two compartments. Both testicles were fixed by operation in the left scrotal sac, and the hernial sac united with sutures, all with good result.

Kenney says that formaldehyde as an artificial ingredient of urine will make it appear albuminous, and will prevent a typical reaction when albumen is present; and calls attention to the fact that the therapeutic use of uretropin may produce a pseudo-albumenuria.

Penn. having a distended bladder to deal with, bent a canula and trocar so as to give the instrument the curve of a urethral sound, and tapped the bladder with it. Through the canula he easily passed a small silver sound into the urethra, thus doing retrograde catheterism readily, and simplifying the operation of external perineal urethrotomy "without a guide."

Pringle obtained fairly good results by transplanting portions of the urethra of the ox into the urethra of man, especially in the perineal region, which is more easily kept at rest than the penile portion.

According to Fuller, cutting into and draining the seminal vesicles relieves inflammation about these parts, and in this way improves the sexual function. His thirty-three cases without mortality show that the operation is devoid of much danger.

Van Hook adds another to our methods of finding the posterior urethra when operating "without a guide." With the patient in the lithotomy position and an adequate perineal wound, place the volar surface of the index finger against one of the rami of the pubic bones; cause the finger to follow the arch of the pubes from a point chosen on one side to a point corresponding on the other side. The finger being moved transversally across the perineal structures, with no important tissues between it and the rectum, the urethra is necessarily felt between the finger and the pubic arch. It slips under the finger as a broad, somewhat flattened band. The urethra being fixed by two fingers against the pubic arch, the soft mass in which it lies may be boldly incised with a knife.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

MARTIN F. ENGMAN, M. D.

The greatest works in any branch of medicine are those that teach great general truths; those that take a chaotic mass of facts and systematize them into their proper order. A master of such a character comes rarely to mould into a solid structure the material of many workshops; thus, in dermatology we have had in Willan, Hebra and Unna, masters who have taken known facts and have laid the foundation of dermatology, upon which future generations may build. A master hand is now needed to grasp the rich material of the present day knowledge; to conform it, mould it, classify it, bring order out of the chaotic mass of brilliant individual detail work that is being daily produced. All this work, even the smallest observation, when based upon well observed facts and conscientious study, is of importance in the great structure. Out of the thousands of conscientious workers and students delving in the field of dermatology some master must soon arise. Dermatologic literature is rich in valuable material. Reports of special and interesting cases are minutely detailed, the journals teem with splendid work of this character, but, articles of a general nature, dealing with this subject broadly, are rare. The French are, no doubt, the foremost in this direction, and, now and then, in the English journals, one finds a thesis upon some general dermatological subject. The text-books in English lack individuality and character. The pages speak not of the writer and his individual experiences and opinions. This year has produced its mass of literature, and in the opinion of the writer it is unusually rich and shows a greater amount of painstaking and careful work than that of the preceding year. From America many excellent papers have emanated. Yet the time has been devoted to detail, out of which, of course,

all great truths must emanate, as was pointed out by Aristotle over two thousand years ago. Leslie Roberts', whose articles are always refreshing, and turn one's attention into new and unique fields, has struck the key-note of progress in an effort at generalization. He says:

"The tendency of the last hundred years, to say nothing of the pre-scientific ages, has been to individualize diseases of the skin, and this was but natural, for eruptions are like things in general, inasmuch as they possess form, size and color, the three characters which the mind instinctively associates with individuality. Hence, when one disease assumes the aspect of red, scaly patches, while another appears in the form of red papules, the human mind instinctively individualizes these forms. The attention of the observer is concentrated on the form and color of the eruption; if he be learned in the language of dermatology, he clothes his individual diseases in garments woven out of words. Open any text-book on dermatology and see how largely the doctrine of efflorescence looms in the mind of the writer. Page is piled on page to describe spots and patches. How minutely he describes their size and color! It has been well said that life is a lesson in the falsehood of appearances, and in no department of knowledge is it more imperative that 'the judgment of the senses must be corrected constantly by experience' than in dermatology. . . . It is now a hundred years since Willan published his classical work. His was the age of artificial botanical classifications. The regions he and his early successors traversed were unexplored. Everything was fresh, and every object they stumbled across was a delightful discovery. With the increased use of the microscope much was hoped for, and truly the harvest was great. But after all, we have not found all we set out to seek: indeed, problems of causation have grown more intricate. The sooner we learn the fact the better it will be for us, that the microscope does not reveal causation, although it has revealed the science of pathological anatomy."

To follow intelligently the course of this author's reasoning, we must quote freely from his article, and we do so as we think the ideas thus brought forward point the way for future thought and research. Roberts goes on to say that, "It is true the microscope in the case of parasitic reactions reveals a foreign organism in the tissues, but it does not prove that the microorganism is the *cause* of the disease. The proof of this is afforded by experiment and by observation of the contagious propagation of the disease. But if we exclude the parasitic diseases, there remains a very large class which includes some of the commonest diseases of the skin. This class includes urticaria, erythemata, the eczemas, psoriasis, lichen, dermatitis exfoliative, and various forms of hydroa. We can search the tissues through and through, but the microscope reveals little more than a redistribution of matter. . . . Surely here are indications that the time has arrived when we ought to examine our

methods of research, and I am glad to see others are of the same opinion. Phillipson, Torek and Brocq have already made a new departure."

The principles of cutaneous reaction rest upon the laws of dynamics and not on morphology. The whole article is a strong plea for the study of live skin and not dead skin. The latter reveals the portion of the structure involved, but we must remember that the different layers or parts of the skin are physiological factors, having their functions in life and are ever active under a "true" or "false" equilibrium. Therefore a study of these non-parasitic diseases is a study of the true physiology of the part and the various factors which make up its life work.

Brocq, in a masterly dissertation entitled "General Conception of Dermatoses," dwells at length upon the subject of cutaneous reaction, going step by step over the field of these various reactions, and draws particular attention to those diseases that are not of parasitic origin. In these he uses as illustration comparisons with the various drug eruptions, pointing out that from these known agents various eruptions may be produced simulating like efflorescences of absolutely unknown origin, and that a certain drug may cause in different individuals dermatoses of vastly different character, and that various drugs may cause in the same individual similar eruptions. Therefore, cutaneous reaction and its proper understanding and solution holds the future of the true dermatologic knowledge; synonymous with this is the subject of physiology and physiological chemistry. Brocq's studies are completed by the following classification, and, as it is short and illustrates his manner or method, we give it in full:

Group I.—True Morbid Entities.

Class I.—Artificial Dermatoses.

- A. Traumatic, of external origin.
- B. Internal origin, provoked by the introduction of irritant substances, medicinal or alimentary.

Class II.—Parasitic Dermatoses.

- A. Caused by animal parasites.
- B. Caused by vegetable parasites.

Class III.—Microbic Dermatoses.

- A. Caused by micro-organisms highly specialized and known.
- B. Caused by micro-organisms very probably highly specialized, but as yet unknown; syphilis.
- C. Caused by micro-organisms ordinarily inhabitants of the skin and are only pathogenic under certain circumstances, and their activity is often significant of a cutaneous reaction dependent upon a general condition.

Group II.—Cutaneous Reactions.

Class I.—Cutaneous Reactions, properly speaking.

Class II.—Cutaneous Reactions, in which the troubles of the nervous system play the major role.

Class III.—Cutaneous Reactions, characterized by disturbance in the normal nutrition of the tissues.

Class IV.—Cutaneous Reactions, characterized by a deviation from the normal type of the tissues.

Another important field for research is that of the blood of patients affected with skin diseases. The literature upon this point is rather meagre, and no doubt offers much for the future, especially as a differential diagnostic feature. H. S. French³ has made a very valuable addition to this particular branch of study. It has been stated that in diseases of the skin the coarse, or granular, eosinophile cells are relatively increased in large numbers of cases, especially in pemphigus, urticaria, dermatitis herpetiformis and psoriasis. Dr. French's findings were as follows: Twenty-one out of sixty-nine cases, or less than one-third, showed eosinophilia; three out of eight with eczema; three out of ten with lupus vulgaris; one out of five with measles; four out of six with pemphigus; three out of four with psoriasis; two out of nine with scarlet fever; two out of three with scleroderma; two out of thirteen with syphilis, and none at all with acne vulgaris, burns, erythema from salol, erythema multiforme, herpes zoster, lichen planus, chronic urticaria. The only cases in which it was marked, six in all, were one case out of eight in eczema; one out of two with lupus vulgaris; three out six with pemphigus, and one out of four with psoriasis. Therefore, eosinophilia is, apparently, far from common in skin diseases, and when it does occur it cannot with certainty be ascribed to the skin disease, nor does the extent, intensity and duration of the skin affection seem to have any relation to the amount of the eosinophilia.

The conclusions drawn from the examination of the blood of ninety cases is interesting.

1. There were a very large number who showed no eosinophilia at all.
2. There were a few who showed slight eosinophilia.
3. Only four showed marked eosinophilia.
4. There were none of the skin conditions investigated in which eosinophilia was not the exception rather than the rule, except in—
 - (a) Pemphigus.
 - (b) Dermatitis herpetiformis.
 - (c) Possibly xanthoma diabeticorum.
5. There were a large number of skin affections in which, so far as the research went, no single case of eosinophilia occurred.
6. There were parasitic diseases showing no eosinophilia.
7. There were a few individuals suffering from psoriasis, from eczema or from syphilis who showed eosinophilia, but many who showed none; so that, owing to its erratic occurrence, the presence or absence of eosinophilia will not serve as a means of diagnosis between syphilitic affections and the other two.

8. There was no evidence in favor of "Canon's law."

9. There was, upon the whole, but with individual exceptions, a relative diminution of polymorphonucleated cells.

10. There was a tendency to a relatively high proportion of lymphocytes.

11. The fall in percentage of polymorphonucleated cells was approximately equaled by the rise in percentage of small lymphocytes.

12. The lymphocytosis was not constant, except in the patient's suffering from—

(a) Congenital syphilis.

(b) Urticaria.

Z. Verroth,⁴ in a study of three cases of dermatitis herpetiformis and two of pemphigus vulgaris, found eosinophilia in the blood and in the bullæ, when more purulent.

C. Adrian⁵ found, in the study of the blood in xeroderma pigmentosum, the relation of cells normal; no leucocytosis; the hemoglobin was diminished. Other writers have found marked blood changes due to the changes in the skin, possibly, physiologically affecting the general system.

Vernet,⁶ in the blood count of three cases of infantile eczema, concludes that eosinophilia is as marked in the new-born attacked by eczema as in adults. The increase in eosinophilia was always *followed* by an increase in the cutaneous symptoms. In one case granulation acidophiles were noted.

The scientific study of the urine in diseases of the skin is a step of prime importance in the proper understanding of individual cases, and through the reports of many such analyses a more rational knowledge may be obtained of the apparent etiology and therapy of certain diseases, thereby placing them upon a practical basis. The French place great value upon this point, their reports being accompanied by careful analyses of the urine and other excretions. At the Fifth International Dermatological Congress, held in Berlin last September, one of the subjects appointed for discussion was "Nutritional Disturbances in their Relation to Skin Diseases." Van Noorden states that certain cutaneous maladies are directly consequent to troubles of nutrition, as myxedema. There is an increase in the elimination of the albuminoides in pityriasis rubra, pemphigus, lichen ruber, while they are diminished in syphilis, but return to normal upon the administration of mercury.

The elimination of indican shows abnormal intestinal fermentation. Certain dermatoses are secondary; pseudo-leucemia and mycosis fungoides are diseases of the bone marrow; purpura a malady of the blood. All researches upon urinary elimination are without value because no balance is struck between the elimination and the amount of food received into the system.

Jadassohn⁸ believes that autointoxication acts (1) by the toxic sub-

stances being carried to the skin and deposited there, thereby irritating the nerve terminals (urticaria, etc.); (2) by toxins which alter the skin indirectly by their effect on other organs (zona); (3) by the toxins being excreted and irritating the surface of the skin (eczema and diabetes.) Then there are nutritional changes which influence the skin in an artificial manner: (1) Anomalies of nutrition in a proper sense of the word (adiposity, gout); (2) maladies of the organs which regulate nutrition, as the glands of internal secretion; (3) maladies of organs which control digestion, absorption, the distribution of nutritive material and elimination of excreta; (4) toxic maladies which are provoked by substances formed in neoplasms. Brocq and Ayrignac present their conclusions after a study of the urine of 2,500 cases, the principal affections being eczema, the seborrheids, psoriasis, pruritus, prurigo simplex, lichen planus, pseudo-pilare and other rebellious alopecias, acne, parapsoriasis and the erythemas:

1. Nutritional troubles have been constant in all of the cases.
2. There is quite frequently intestinal fermentation.
3. Albumens are increased in some instances, but most frequently diminished.
4. There exists in certain cases a disassimilation of the mineral materials.
5. Urinary insufficiency is most frequent.
- 6 The seborrheids, eczema and pruritus simplex exhibit the most marked deviation of metabolism,

Buschke finds the elimination of grease by the sebaceous glands is increased by the alimentary absorption of grease, as Von Noorden found in acne.

Radelli¹⁰ has found that arsenic in therapeutic doses influences the elimination of urea, and, at the same time, azotic materials.

J. F. Schamberg¹¹ suggests the following classifications for "The Toxic Erythemata":

1. Bacterial and protozoal.
2. Ptomaines.
3. Leucomains and other metabolic poisons.
4. Drugs.

This group of diseases ranges from an urticaria, through the erythemata to the purpuras and holds an interesting position and the key to future study. These diseases affect both the skin and mucous membrane. J. A. Fordyce¹¹ and also the writer of this review¹² have lately discussed the "Affections of the Mucous Membrane in Their Relation to Skin Diseases." This subject was brought forward to initiate an understanding of probably similar processes operating upon both forms of tissue. The former writer remarks that in the diagnosis of mucous membrane lesions in general the usual rules which apply to purely cutaneous ones often fail. There is less color contrast on account of

the more translucent nature of the epidermic covering; vesicles, bullae and pustules do not long exist as such; papular lesions are less sharply defined and more easily eroded; infiltrations readily ulcerate and become infected and squamous types undergo modification by reason of the moisture of the epithelial cells. Many skin diseases attack the mucous membrane, but it is difficult to make a diagnosis of one of these conditions when it exists only upon the mucous membrane, we should have the dermal evidence for confirmation.

The latter writer¹² was inclined to believe that various catarrhal conditions of the mucous membrane were conveyed to the skin by autoinfection, and *vice versa*, the former occurrence being far more frequent. It is also believed that certain intestinal crises and abdominal pains are of an urticarial nature, produced by the ingesta acting *traumatically* upon an irritable or "dermographic" mucosa as the slightest trauma upon a dermographic skin. This may occur with or without dermal manifestations. This subject is an important one to general medicine and deserves further study.

Gaucher and Druelle¹³ report a patient affected with lichen planus, in which the conjunctiva presented whitish horizontal bands, with sharply defined outlines situated midway between the ciliary margin and the globe.

W. Kopytowski¹⁴, from the study of twenty-four cases of herpes progenerialis in women, believes that it is pathologically identical with zoster, both presenting the same characteristic cell necrosis. Both are probably of an infectious nature.

Wm. Osler¹⁵ reports two cases of an interesting condition involving the nose, cheeks and hands, also the sclerotics, which was called by Virchow achronosis. It consists of a deposit of bluish-black material in these localities and is associated with alkaptonuria.

Carpenter¹⁶ calls attention to the fact that in urticaria in childhood a marked pulsation can be frequently seen in the wheals synchronous with the heart beats.

No conditions of the skin better display the individuality of cutaneous reactions than those in which bullae are formed. And it brings us forcibly to the conclusion that from the pemphigus group many affections will in the near future be separated from it. The writer's case of "Bulbous Lichen Planus"¹⁷ is interesting, as the bullae were so numerous that the case at first glance simulated pemphigus. The bullae could be produced on the lichen patches by friction, but after the lichen planus disappeared or became under control by treatment, bullae could no longer be produced. F. Krzystalowicz¹⁸, basing his remarks upon a case of "Dermatitis (chronic streptococic) Assuming the Form of a Pemphigus," says pemphigus does not constitute a clearly defined syndrome, in spite of the dicta of Kaposi. The appearance of bullae common to the different forms collected under this name, vary considerably in their

aspect as in their evolution. Only careful histologic and bacteriologic research can throw light on each case.

Stanziale¹⁹, in the study of a case of pemphigus vegetans of Neumann, isolated from the blood drawn from the median-basilic vein a minute bacillus. From the clear vesicles a similar bacillus was grown. The pseudo-diphtheritic bacillus was also found in the vegetations.

Eustis²⁰ isolated a diplococcus from the bullae of pemphigus vulgaris similar to the one previously described by Claessen and others, which is no doubt a variety of staphylococcus found also in the clear contents of the bullae of bullous impetigo.

Bowen²¹ brings out a startling theory, based upon sound reasoning and good clinical grounds, in an article entitled, "Acute Infectious Pemphigus in a Butcher, during an Epizootic of Foot and Mouth Disease, with a Consideration of the Possible Relationship of the Two Affections." Such a condition as the author describes is often fatal, consisting of bullae on the skin and in the mouth and throat. Dr. Bowen suggests that in these cases following vaccination the virus of foot and mouth disease might be introduced with the vaccine virus, if, of course, the calf from which the vaccine was taken had foot and mouth disease or had been exposed to it. The suggestion seems a very reasonable one and is certainly worthy of careful consideration.

BACTERIOLOGY.

F. B. Mallory²², in four cases of scarlet fever found bodies which in their morphology strongly suggest that they may be various stages in the developmental cycle of a protozoon. They occur in and between the epithelial cells of the epidermis and free in the superficial lymph vessels and spaces of the corium. The great majority of the bodies vary from two to seven microns in diameter and stain delicately but sharply with methylene blue. They form a series of bodies, including the formation of definite rosettes with numerous segments, which are closely analogous to the series seen in the asexual development of the malarial parasites, but in addition there are certain closely reticulated forms which may represent stages in sporogony or be due to degeneration of the other forms.

Others have also found these bodies of Mallory and confirm his opinion of their protozoic nature.

W. F. Howard and R. G. Perkins²³ confirm the work of Councilman, and assert that the bodies found by him in variola are stages in the life cycle of a protozoon parasite, and that they are so intimately related to the skin lesions of variola, and are of such a definite character that they are led to the conclusion that these parasites are the cause of the disease.

F. J. Bosc²⁴ believes the parasite of cancer to be a sporozoa which has an asexual mode of reproduction, and a mode of sexual reproduction.

with the formation of kystes and of sporocystes, with a possibility of reproduction by new spore formation.

D. W. Montgomery²⁵ gives his "Reasons for Considering Dermatitis Coccidoides an Independent Disease," as follows:

1. The cultures are characteristic.
2. The organism has a double cycle of development, the one cycle differing absolutely from the other.
3. There are no budding forms either in the cultures or in the tissues.
4. There is endogenous spore formation in the tissues, and this appears to be the sole mode of reproduction in the tissues.
5. The capsulated bodies in the tissues are comparatively large and are almost always circular.
6. In animal experiments the testicle is a favorite seat of the disease.
7. The infection tends strongly to become generalized.
8. The prognosis is absolutely bad.
9. The administration of iodide of potash has no control over the disease.

R. Harand²⁶ gives us a *hemoprotiste* as the organism of syphilis. It is found in the lesions and especially in the blood.

H. R. Oliver²⁷ reports a "Peculiar Infection of the Mouth and Throat with a New Variety of Oidium Resembling Thrush." Several cases are reported, all in patients over twelve years of age. The first symptom is a dry cough, some coryza and pain upon swallowing and aching in the back and loins. The mucous membrane of the tongue, mouth and throat is hyperemic, with enlargement of the tonsils and uvula. The lymph glands under the jaw become enlarged. A thin, grayish-white, shine-like membrane involves the tonsils. New patches of the membrane invade the tongue and cheeks, becoming thickened and adherent. The disease sometimes lasts six months, during which time rebellious ulcers may form. It is a contagious affection. From the patches and membrane a fungus was isolated which was fatal to animals. One of the pathologists working with the material contracted the disease.

Labbe and Demarque²⁸ describe the case of two infants of "impetigo and ecchyma due to the diphtheria bacillus." These children had had diphtheritic angina, accompanied by the above named skin lesion on the face, from which the Klebs-Loeffler bacillus was isolated and associated with streptococci and staphylococci. Antidiphtheritic serum had no effect upon the skin complication.

Veiel²⁹ has studied "the staphylococci in chronic eczema," and found that in all forms and in all stages that organism is present, generally the yellow, occasionally the white and rarely the other forms. He believes that staphylococci found in eczema to be identical with the common form, and that they play an important part in the course of the disease.

L. P. Hamburger.³⁰ in an article entitled "Creeping Eruption; Its Re-

lation to Myiasis," brings forward a strong argument in favor of his suggestion. He believes it probable that the two conditions are closely related, especially when one considers the role of the bot fly in the production of the Russian examples of the disease.

P. G. Woolley³¹ describes a fungus as a cause of "Pinto: Pano Blanco," the disease in the tropics in the form of pinkish white patches, irregular in shape and size. They may occur on any portion of the body. The fungus forms a meshwork of threads finer than the trichophyton.

Trommsdorff,³² in investigating the "Bacteriology of Chromidrosis," has isolated two organisms, a red and a yellow bacterium. Inoculation experiments with the yellow produced yellow sweat, but experiments failed with the red.

TUBERCULOSIS.

J. T. Bowen,³³ describes a case of "Peculiar Inclusions in Lupus-like Tissue," similar to a like condition reported by various writers. The case was thought to be blastomycosis, but upon microscopical examination it more resembled lupus with these peculiar bodies within the giant cells. They were round or oval in shape and were often apparently surrounded by a membrane. The author states that it was difficult to not believe them parasites.

Schulze³⁴ draws attention to "The Presence of Tuberculosis Verrucosa Cutis in Miners." The disease does not commence as ordinary lupus does, but as a small brownish-red linseed-sized macula covered by a white shiny scale. The backs of the hands and fingers are most commonly affected. A total of 116 cases have been collected by Fabrey and Schulze.

L. Pautrier³⁵ places "Angio Keratoma" among the tuberculides on account of its histological architecture and its coexistence with definite tuberculous signs in other localities and with certain recognized tuberculides.

V. Klingmueller³⁶ makes a valuable "Contribution to Tuberculosis of the Skin," from Professor Niesser's clinic. His work has been particularly with lichen scrofulorum, which he believes to be of tuberculous origin, due not to the local action of the bacilli, but to their toxins.

A. Alexander³⁷ contributes to the "Clinical and Histological Characteristics of Folliculitis." His article is based upon the study of seven cases, and his observations show the close relation between folliculitis and tuberculosis. The histological examination of these cases leads the author to believe that in certain cases the lesions are due to endarteritis and periarteritis caused by embolic plugs from the lung or gland containing tubercle bacilli. Certain other cases are, however, not typical of tuberculosis in their histologic architecture.

Adamson³⁸ has collected the literature on "Multiple Lupus Vulgaris Consecutive to Measles." He finds that in these cases the tuberculous eruption appears nearly always immediately after or within a few weeks

of the measles. The great majority of the acute cases of tuberculosis of the skin occurred after measles. The embolic theory demands that the emboli must occur in other organs besides the skin, and in two reported cases the patients did succumb to acute general tuberculosis.

SYPHILIS.

H. Hallopeau's⁴⁹ article on "The Toxic and Immunizing Substance of Syphilis" is one of the most valuable studies of the year, but his conclusions go so much into detail that it would be impossible to give them even briefly here. It is to be hoped that this paper will be widely read.

Hullen,⁵⁰ in the study "On the Development of the Pigmented Syphilide of the Neck: a Clinical Study," bases his conclusions upon the observation of twenty-two cases. He believes the white areas are depigmented and the pigmented areas are developed from the ordinary roseola and papular eruptions.

E. Boem⁵¹ reports "Accidents of Syphilis Forty-five Years After the Initial Lesion," in the form of syphilitic lesions of the nervous system.

J. A. Fordyce's⁵² case of "Symmetrical Cutaneous Atrophy, with Coincident Development of Syphilis of the Skin and Nervous System," is exceedingly instructive and interesting, and worthy of careful reading.

J. Elcheverry,⁵³ from the study of "Syphilis and Cancer," believes that: (1) Cancer may follow syphilis by the intermediary of leucoplasia; (2) Cancer may be installed upon permanent or resistant plaques, cicatrices and gummas.

Metchnikoff, Roux and Lassar have at last undoubtedly successfully inoculated a lower animal with syphilis. Their experiments with apes prove that certain of the lower animals are susceptible. Before these experiments all such attempts have proved unsuccessful or unsatisfactory. Now an unlimited field of research has been opened up, and we may be able thus to discover the organism of the disease, if our venerable ancestors procreate in sufficient numbers.

At the Fifth International Congress of Dermatology, Professor Neisser⁵⁴ read a paper upon "Attempts to Inoculate Syphilis into Apes," which aroused great enthusiasm. He referred to the work of Metchnikoff, Roux and Lassar; then detailed his own results. A chimpanzee of from one to three years old was chosen, and was given serum by injection from a patient with secondary syphilis. These injections were continued at slightly irregular intervals from October, 1903, to June, 1904, and at the end of the period 442 c.c. of the syphilitic serum had been injected without producing any signs of syphilis. A week after the last injection several inoculations were made on the animal by means of pieces taken from a secondary syphilitic lesion of the tonsil. Some of these inoculations were carried out by means of rubbing scarified areas with the diseased tissue, and others by the actual introduction of the tissue into small pockets made in the skin. The result was the produc-

tion of a chancre in the case of some of the scarified areas, but none in the parts in which the pieces of tissue had been actually introduced. The primary inoculation experiment took place on June 17th, and on August 5th a typical secondary eruption was observed. The conclusions drawn were that the injection of even considerable amounts of serum from a syphilitic man produced no ill effect upon the chimpanzee, although there was time enough for the production of secondary syphilis before the inoculation experiments were carried out. Secondly, that this exhibition of serum had no effect in producing an immunity to the succeeding inoculation; and, therefore, those observers are supported who see in Colle's law the infection rather than the immunization of the mother, and that no grounds exist for the belief in the transference of immunizing substances from the child to the mother. As far as one can judge in a hairy animal, successful inoculation of syphilis on the chimpanzee was obtained. Neisser also criticised some of Metchnikoff's deductions as to the immunization of chimpanzees by inoculation from nodules produced by syphilis in a macaque, on the ground that not every inoculation into a chimpanzee is successful.

He was followed by Prof. Metchnikoff, who stated that he had now had successful results from the inoculation of oranges and gibbons. He had also determined the facts that the virus did not pass through the Berkefeld filter, and that adding glycerine to it did not destroy it. He considered chimpanzees very susceptible to syphilis, and that the macacus sinicus was probably the best animal for attenuating the virus. He thought that those apes which showed the least significant symptoms of syphilis after inoculation would probably prove the best from which to obtain a protective serum.

REFERENCES.

1. Brit. Journ. Derm., p. 401. 1904.
2. Annals de Derm. et de Syph., p. 193 and 289. 1904.
3. Brit. Journ. Derm., p. 147. 1904.
4. Giournal Ital. vener. e., p. 358.
5. Derm. Centrallblt., p. 130.
6. Jour. Cut. Dis., p. 93.
7. Ann. de Derm. et de Syph., p. 897.
8. Ann. de Derm. et de Syph., p. 900.
9. Ann. de Derm. et de Syph., p. 399.
10. Jour. Cut. Dis., p. 461.
11. Jour. Cut. Dis., p. 396.
12. Jour. Cut. Dis., p. 412.
13. Jour. des Mal. Cut. et Syph., p. 108.
14. Arch. f. Derm. und Syph., p. 55.
15. Lancet, p. 10.
16. Brit. Journ. Chil. Dis. July.
17. Jour. Cut. Dis., p. 207.
18. Revue Prat. Mal. Cut., Syph. et Ven., p. 150.
19. Ann. de Derm. et de Syph., p. 15.
20. Amer. Med., p. 634.
21. Journ. Cut. Dis. June.
22. Jour. Med. Research, p. 483.
23. Jour. Med. Research, p. 381.
24. Ann. de Derm. et de Syph., p. 934.
25. Jour. Cut. Dis. August.
26. Lyon Med. February 21st.
27. Cal. State Jour., p. 240.
28. Ann. de Derm. et de Syph., p. 838.
29. Munch. Med. Wochenschr., p. 13.
30. Jour. Cut. Dis., p. 217.
31. Jour. Cut. Dis., p. 479.
32. Munch. Med. Wochenschr., p. 1285.
33. Jour. Cut. Dis. January.
34. Archiv. f. Derm. et Syph., p. 329.
35. Archiv. f. Derm. u. Syph., p. 145.
36. Arch. f. Derm. u. Syph., p. 167.
37. Arch. f. Derm. u. Syph., p. 167.
38. Brit. Jour. Derm., p. 366.
39. Ann. de Derm. et de Syph., p. 737.
40. Ann. de Derm. et de Syph., p. 159.
41. Ann. de Derm. et de Syph., p. 947.
42. Jour. Cut. Dis. April.
43. Ann. de Derm. et de Syph., p. 797.
44. Brit. Jour. Derm., p. 414.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

Increasing interest in laryngology and otology has continued throughout the year. The number of articles published being so large, it will be possible to touch only briefly on the most important of those that have been brought to the notice of the reviewer.

While there have been no startling discoveries chronicled, it is worthy of notice that an effort is being made to establish the relative values of some of our present methods. Such subjects as the preparation and after treatment of the patient for intra-nasal operations, which had been heretofore considered far too trivial by the majority of writers, have received special consideration. The London Laryngological Society chose these subjects for a general discussion. The same subject, when brought before the German Otological Society at Wiesbaden, was discussed by the majority of members present.

These discussions reveal that there is a decided difference as to the many details of management, but the majority agree that the nose is better left alone after operation; a healthy wound should not be disturbed by unnecessary local applications. The question as to packing the nose after intra-nasal operations is far from being settled. Many authors condemn the use of the plug, while an equally large number advocate a brief period of packing.

In last year's review considerable space was given to the subject of hay fever, especially to the researches of Prof. Dunbar, of Hamburg. During the past year he has added very little of practical value. In a recent review¹ he states that the results accruing from the use of antitoxine are far superior when the serum is used strictly as a prophylactic, it being very difficult to stop a severe attack of hay fever by using the antitoxine as a curative agent. The average success, according to the statistics of several hundred cases, seems to be between 60 and 70 per cent. It has been proven that the antitoxine part of the serum is entirely in the globulin. Experiments are now being conducted with an antitoxine from which the albumen has been eliminated, in order to find out if the antitoxine can be used hypodermically without producing any irritation. Dunbar is also engaged in the manufacture of an antitoxine to be used in the prevention and treatment of autumnal catarrh, prevalent in this country. The pollen of the golden rod and rag weed has been selected for this purpose. The author hopes to have a more effective serum than that furnished during the past year.

The experience of Braden Kyle in the chemistry of the saliva and nasal secretions in relation to hay fever was given in last year's report. His work along this line during the past year² has persuaded him that in some cases the causes, direct or indirect, of local irritation in the nasal mucous membrane are brought about by chemie change in the constituents of secretion of the mucous secreting glands. He has found in many instances an excess of the sulpho cyanides and the ammonium salts in the saliva and nasal secretions. When these secretions are exposed to the air free ammonia is liberated, which Kyle believes in many cases to be the cause of the attack, the symptoms produced being identical with those of the inhalation of ammonia fumes. By rapidly changing the reaction of the secretions, either from acid to alkaline or from alkaline to acid, or rendering it neutral, he has been able in many instances either partially or wholly to cure the attack. According to his experience, treatment based on this view from 80 to 90 per cent. of all hay fever cases can be relieved or cured.

In the report of 1903 the theory of Fink as to etiology of hay fever and his method of treatment was given. In a recent report³ he discusses the antitoxin of Dunbar, and states that it does not and cannot have any action at all. Fink believes that the attacks are directly caused by some irritant agent of which grass pollen is the most common. The nasal symptoms being due to an irritation of the nerve endings of the trigeminus, involving principally the secretory fibers in accessory cavities of the nose, the antrum being the main seat of the trouble. The writer states that he has found aristol to cure all forms of nervous coryza, including hay fever. He blows the aristol through a thin curved canula which he has passed into the antrum through its natural opening. This he claims can be done in about 95 per cent. of the cases. The application is made every day for three days, after which the attacks become less frequent and milder. When there is a recurrence the insufflation is repeated.

Alexander Francis, in his recently published work on asthma in its relation to the nose, presents clinical data of 402 cases. In most of these cases he was able to demonstrate some abnormal condition in the nose, and on removal of this complete relief was obtained. He acknowledges only about 4 per cent. of failures. Interesting in this connection are three cases reported by Rethi⁴, in which attacks of vertigo and paresis of the right lower extremity were brought about by tamponing the nose. These symptoms all disappeared promptly after the tampons were removed. Rethi does not regard these as reflex symptoms, but that this symptom complex was brought about by disturbance in the blood and lymph circulation at the base of the brain. Makuen⁵ believes that it is reasonable to suppose that some of the most serious mental and cerebral diseases may be of nasal origin. Many of the so-called neuroses may be explained on the theory of faulty respiration and impaired cerebral

circulation, due to direct intranasal pressure and the absorption of toxic catarrhal products.

The question concerning the etiology of deviations of the septum is still unsolved. Freudenthal⁶ examined 814 crania of aborigines from all over the American continent and found that the total number of deviated septa amounted to 264, or more than one-third showed a pathological condition. This disproves what was formally believed, that symmetrical septa were the rule in primitive types. He holds as the most plausible explanation the one given by Chiari; most human beings are asymmetrical; this asymmetry is naturally more evident where both halves of the body join together as in the septum of the nose. On the side on which the growth is strongest more tissue will develop and a slight cavity will take place. There is still no unanimity as to the best method of dealing with deflections of the septum. The submucous resection of the septum, or the so-called "window resection" of Krieg, is rapidly gaining in favor: its most ardent admirers in this country are Freer, of Chicago, and White, of Boston, while Hajek⁷, Mensel⁸, Zarniko⁹, Mueller¹⁰, are its warmest supporters in Germany. The operation of Moore seems to be the one most often employed in England. Gibbard Miles¹¹ favors the operation of Ash.

Nothing especially new as to the etiology or treatment of ozena has been brought to our notice. Thiesen¹² inclines to the view of Gruenwald, that sinus disease causes a considerable percentage of the cases. Suppurative processes in the accessory sinuses are frequently present in certain of the infectious diseases of childhood, and for that reason the infectious diseases must be considered possible etiological factors of ozena. Sziemsky¹³ and Tarnowski¹⁴ report success in the treatment of this affection with diphtheria antitoxine. The former collected 110 cases treated by this method. Of these cases, 22 per cent. were permanently cured, 6 per cent. almost completely cured, 37 per cent. improved and 24 per cent. temporarily improved. In 8 per cent. the result was uncertain because the treatment had been abandoned too early, and in 3 per cent. the results were negative. Sziemsky believes that the theoretical basis of this treatment should not be looked for in the similarity of the germ of ozena to that of diphtheria, but in the similarity of the toxins of these two affections in a chemie sense. Fliess¹⁵ reports twelve cases treated by sub-mucous injections of paraffin. Thirty-two injections in all were made. The results amounted to practical cures. Stella¹⁶ also reports success with the latter method. Brouner¹⁷ has pointed out a distinct relation between ozena and gastritis. The offensive nasal discharges, loaded with bacilli, passing into the stomach causing a fatty degeneration of the glandular elements. Jurgens¹⁸ reports a death following ozena. The direct cause of death was a meningitis, which had its origin in the suppurative process in the ethmoid.

With a view to determining the mode of origin of nasal polypi,

Yonge¹⁹ has made some careful microscopic examinations of the nasal mucous membrane during the various stages of polypi formation. His conclusions are: (1) In the majority of instances mucous polypi are probably consequent on and certainly coincident with inflammation of the mucous membrane of the nasal cavity. (2) The primary mechanical process is a localized edema of the inflamed mucous membrane, which edema, on account of certain structural peculiarities of the lining membrane, does not in the great majority of cases develop in any intra-nasal area, but in a portion of the middle turbinal and of the middle meatal region. Analogous structural peculiarities are present in the mucous membrane of some of the accessory sinuses. (3) The determining cause of edema in the regions specified is the degeneration and cystic dilatation of the mucous glands. (4) The particular shape which polypi usually assume, their number, probably the appearances of recurrences in some instances and the special peculiarities of these growths are due to the edematous mucous membrane being thrown into folds and to the normal folds becoming edematous. Certain of the folds quickly increase in size by the absorption of serous fluid and favored by gravity, and finally present the appearance of ordinary mucous polypi. (5) The "polypoid" outgrowths which take origin on the inferior turbinal and more rarely on the septum, generally differ markedly in microscopic structure from mucous polypi, and, although they claim a common inflammatory origin, these conditions are distinct, especially on account of the dissimilar structure of the nasal regions from which they respectively take origin. Yonge is arranging to conduct some experiments with a view of producing mucous polypi artificially in animals on the basis of the causative influence of glandular changes.

The accessory sinuses have received their usual attention. Kaiser²¹ has demonstrated that there is an intimate relation between the blood supply of the mucous membrane of the antrum, the periosteum of the alveolar processes and the teeth. The blood vessels belong to the same system and anastomose very freely. He thus accounts for the frequent association of antral suppuration with carious teeth. A number of valuable papers on the diagnosis and treatment of sinus suppurations have appeared during the year. Notably those by Killian²², Tilley²³ and Barens²⁴. The Caldwell-Luc operation for chronic suppurations of the maxillary sinus with a large counter opening of the nose, continues to give the best results. The Killian operation has, according to Luc²⁴ and Eschweiler²⁵, given the best results in chronic suppurations of the frontal sinus. Oakley²⁶ has described an easy method of entering the sphenoidal sinus for diagnostic purposes. His method is to spray the anterior nares with a solution of 2 per cent. cocaine in a 1-10000 solution of adrenalin chloride. At the end of five minutes this is repeated. An applicator wound with cotton is then dipped in a 10 per cent. solution of cocaine and passed between the middle turbinate and the septum to the

posterior limits of the nares. The nose is next irrigated with sterile normal saline solution to remove as much of the secretion as possible.

Inspection of the nares, both anteriorly and posteriorly, is next made for the purpose of detecting any remaining secretion. The region between the middle turbinate and the septum is repeatedly cleansed with a cotton wound applicator until all secretion has been removed. A thin flexible applicator, curved slightly upward for about three-quarters of an inch, is tightly wound with cotton. This is passed between the middle turbinate and the septum until it reaches the anterior surface of the sphenoid bone. The applicator is then moved from place to place until it is found that the instrument suddenly passes through an opening into a cavity of the depth of half an inch more or less. The diagnosis of a diseased sinus is made when one or more of the following conditions are observed: 1, On withdrawing the applicator and rubbing the cotton on a slide a microscopical examination shows the presence of pus; 2, if muco-pus is seen at the upper part of the chasm, this having been forced from the cavity by the instrument; 3, the feeling at the end of the instrument as if the cavity had a soft, velvety or pulpy lining.

Headache from disturbance of the air pressure in the accessory sinuses of the nose is, according to Robertson, not so rare as might be supposed. The cause of the headache is due to a lack of pressure in the sinus. This diminution in pressure is caused by obstruction to the ingress of air to the particular sinus by closure of its natural orifice. For instance, the middle turbinate may be swollen from inflammation, the swollen body obstructs the sinus, so that the cavity is shut off from the nasal chamber. The imprisoned air loses its oxygen from absorption, the pressure on the mucous membrane is lessened by rarification of the air contained in the cavity. This causes a swelling of the mucous membrane in the sinus. The same condition existing here, as in non-suppurative inflammation of the ear, caused by occlusion of the eustachian tube.

A distinct relation of many diseases of the nose to those of the eye, is pointed out by Schmigelow²⁷. In sixty-three cases of accessory sinus disease there were seventeen eye complications. Halasz²⁸ and Carbone²⁹, report similar experiences. Coffin³⁰ and Levy³¹, have shown that there is a distinct relation between diseases of the upper air passages to those of the stomach.

More evidence as to the relation of tonsilitis to rheumatism has been brought forth. Miller³² reports a number of cases of rheumatism preceded by tonsilitis. He urges the necessity of the care of the throat, and advises that the salicylates be given all through the attack, and continued for two weeks after convalescence has begun. Jordan³³ highly recommends the administration of the sulphate of quinine in tonsilitis. He believes it is as much a specific in this disease as it is in malaria. He also claims that quinine is of value as a diagnostic agent in differentiating tonsilitis from diphtheria and scarlatinal anginas, as the quinine

does not exert any influence on the last two. The quinine is given only at night, a half grain at seven and a half grain at seven thirty. The patient will be without fever on the following morning, and by evening will have fully recovered. Myles³⁴ advises operative treatment with a view to the prevention of cervical adenitis. He advocates the thorough removal of the bases of all tonsils associated with continued and decided cervical lymphoid enlargement. The modern trend of opinion favors the thorough removal of the tonsils instead of merely clipping off the protruding portion, especially in adults. Winkler³⁵ has discarded the tonsilitome in children as well as adults. Pyncheon³⁶ advocates the cauterizing knife. Harmon Smith³⁷ discusses the different causes of severe tonsillar hemorrhage, and finds that the Mikulicz-Stoerk tonsillar hemostat to be the most effective instrument for controlling these hemorrhages.

Another death following the removal of adenoids has been reported by Burger³⁸. The case was that of a child eleven years of age, which was suffering from a leucæmia of a lymphatic form. He reports a second case, in which a leucæmia was suspected, owing to the pale and cyanotic appearance of the pharyngeal tonsil. The child died some weeks later, and the autopsy confirmed the diagnosis. These cases are the first of the kind reported in the literature of adenoids. Jarecky³⁹ emphasizes the fact that adenoids exist in infants, and that an early operation saves the patient from the defects caused by ignoring their presence. He reports five cases in which the diagnosis was made and the adenoids removed with a curette, the youngest being only eight days old. Smye⁴⁰ has observed that there is a marked physical improvement in children in whom the adenoids have been removed, even when they still continue to be mouth breathers. He believes that the adenoid secretions have a deleterious influence on the digestion, which ceases when the adenoids are removed.

The subject of laryngeal tuberculosis has received an unusual amount of attention during the past year. Krieg⁴¹ compares the present status of the surgical treatment of laryngeal tuberculosis with that of ten years ago. At that time energetic surgical treatment was generally employed. Since that time the majority of laryngologists have gradually given up radical surgical procedures and confine themselves to local disinfection, while a few employ the galvano-cautery. Krieg is an enthusiastic advocate of the galvano-cautery. The advantages claimed for it over cutting instruments are, that all points in the larynx can be reached with it, there is no bleeding and only a slight reaction occurs. Mermod⁴² is also a champion of the galvano-cautery; he believes this to be the ideal form of treatment. He has obtained definite cures even when the state of the larynx appeared desperate. Krause⁴³ is also an advocate of radical surgical procedures. He prefers cutting instruments and ascribes the many failures to faulty technic. Stein⁴⁴ reports success in two cases in which

he performed thyrotomy. Lochhard⁴⁵ and Gallagher⁴⁶ advocate the local use of formalin. They claim that formalin is not only equal but superior to lactic acid, it being by far the most successful remedy in infiltrative cases. In cases in which there is hyperemia and also a hyperesthesia, Solly⁴⁷ claims there is usually a simple laryngitis and if the nose is investigated a rhinitis with some obstruction may be found. Even when the laryngitis is tubercular and the nose and naso-pharynx is diseased they should be treated as radically as the case demands and the general condition of the patient permits, there being practically no danger of tubercular infection of surgical wound. Solly advocates the curetting of tubercular ulcers, but the use of the curette should be preceded by cauterization of the ulcer by pure lactic acid.

The most important contributions to the literature of malignant diseases of the larynx are those by Semon,⁴⁸ Glueck⁴⁹ and Delvan.⁵⁰ Surgical treatment alone offers hope of a cure. The x-ray and other radiants are so far a disappointment. The relative values of the different methods proposed for the treatment of laryngeal cancer is discussed by the different authors. The endo-laryngeal removal of intrinsic cancer has only a few advocates, namely: Frankel, Juraz and E. Meyer. Semon⁴⁸ says the intra-laryngeal method is, from its very nature, unsuitable for the radical removal of malignant new growths of the larynx. The British school of laryngologists consider the operation of thyrotomy to be ideal in these cases. Hemi-laryngeotomy comes into question only when it is found, after opening the larynx, that mere thyrotomy will not suffice. Total laryngeotomy should be exclusively reserved for extrinsic and those cases in which the disease has progressed too far to be eradicated by milder measures.

Immediate tracheotomy in cases of foreign bodies in the bronchi is advised by Nehrkorn.⁵¹ No time should be wasted on bronchoscopy.

The efficacy of the treatment of acute otitis media by aseptic drainage is shown by Gradle.⁵² The principles of his methods are paracentesis as soon as the diagnosis is made, and continuous absorption of the discharge by an aseptic gauze drain in the meatus, and a large dressing over the auricle. The external gauze pad is changed as soon as moisture shows, while the tampon may be left from twenty-four to forty-eight hours at a time. The character of the discharge is taken as a criterion as to the efficacy of the treatment. In the milder cases, which either perforate spontaneously or are punctured within the first or second day, the discharge is always serous. The change from serous to purulent secretion seems to depend mainly on insufficient removal of the fluid. When successfully carried out, this method has yielded the author the quickest results.

That the rhodan reaction of the saliva of ear cases is of diagnostic value is proven by Jurgens.⁵³ He concludes from his findings in forty-nine cases: (1) That when a decided rhodan reaction can be obtained

from the parotid saliva, the ear on the same side is normal or only very slightly involved. (2) A negative result in ear disease proves the affection to be a severe one, providing other diseases can be excluded. (3) A weakening of the rhodan reaction shows, according to the grade, more or less involvement of the corresponding ear, and can be regarded as a good criterion as to the severity of the disease process. Accordingly, the reaction may be absent or present in acute or subacute cases. (4) If the reaction returns during the course of a middle ear affection, it shows the benign course of the disease, or if the reaction should disappear the course of the disease can be regarded as unfavorable. (5) If in middle ear inflammations the process has apparently subsided, and the discharge has ceased, and there is a negative reaction, it shows that nerve structures in the middle ear have been destroyed, or that the process will soon be active again. When there is a decided positive reaction, the proof is established that the process has subsided. (6) That the rhodan reaction can be made in cases where an otoscopic examination is impossible, as in the cases where the canal is occluded; it then becomes a very valuable diagnostic and prognostic aid. (7) The presence of ptyaline in the saliva is not dependent on the function of the nerves in the middle ear. Ptyaline was always found where no trace of rhodan could be obtained.

In order to determine whether in the majority of cases of acute otitis media are better treated without performing paracentesis, as claimed by Zaufal and Piffi. Burkner⁵⁴ carefully observed forty-four cases treated without a paracentesis and compared the results with the cases in which an early paracentesis was done when there was severe pain, fever, a reddened and bulging drum membrane. He found that when an early paracentesis was performed the disease ran its course in about one-third the time, the suffering of the patients was greatly lessened and serious complications less frequent.

The value of lumbar puncture in the treatment of aural affections, vertigo in particular, is noted by Babinski.⁵⁵ He has performed lumbar puncture in 106 cases of aural disease. Among these were thirty-two with vertigo. In twenty-one cases very satisfactory results were obtained, while in eleven cases the results were negative. Seven of the cases remained well for six months and one for thirteen months. Tinnitus was found much more rebellious to treatment than vertigo. In ninety cases there were thirty in whom the trouble diminished appreciably or disappeared. Deafness was still more rebellious, only in thirteen out of one hundred was there any improvement in the hearing. Lake⁵⁶ reports a case in which he removed the semicircular canals in a case of unilateral vertigo. The patient, a woman aged twenty-one, had been a subject of aural vertigo, combined with sickness and vomiting, with gradually increasing deafness for the past five years. In spite of all treatment these attacks grew worse. Under a general anesthetic, the

mastoid was opened in the ordinary way, and after removing the malleus and incus, the semicircular canals were removed with a burr and a medium-sized opening was made into the vestibule. The wound was closed by the ordinary method. Considerable shock followed the operation, and for the first forty-eight hours there was marked cerebral irritation. After the seventh day she began to improve gradually until the fourth week, when she was able to go about without falling. There has been no return of the trouble.

In support of the vascular theory of tinnitus, Reik⁵⁷ offers his laboratory experience and clinical evidence. His explanation of the mode of production of tinnitus is found in the dilatation of the blood vessels in the tympanum or labyrinth. This permits an increased volume of blood to pass through them, and thus cause the radiation of sound waves, which though small in amplitude and intensity, are so magnified by the proximity of the vessel walls to the terminal filaments of the auditory nerve they become appreciable. He believes that the proper treatment for tinnitus should consist in the employment of remedies calculated to raise arterial tension. Bryant⁵⁸ says that tinnitus aurium may be due to any of the changes causing impaired hearing and to nearly all systemic diseases. He gives a very complete classification of all forms of tinnitus.

The employment of serum agglutination in the early diagnosis of tuberculosis of the middle ear is recommended by A. De Simoni.⁵⁹ The test consists in obtaining a small quantity of blood serum from a puncture in the finger of the patient by means of a sterilized pipette, and testing the agglutinating powers of this serum upon certain specially prepared cultures of the tubercle bacillus, known as "homogeneous cultures," prepared according to the method of Arloing. Equal quantities of the culture and serum are mixed in a tube and allowed to stand in room temperature from four to six hours. If a flocculent deposit takes place the reaction is positive; if the contents of the tube remain unchanged the reaction is negative, and if the sediment is scanty and the cloudiness slight the reaction is uncertain.

Myringotomy as a method of improving the hearing in chronic otitis media (adhesion sicca and sclerotica) is recommended by Stefanowski⁶⁰. He concludes after performing this operation on sixteen cases: (1) Myringotomy is easily performed, practically painless and without danger; it should for that reason be frequently employed to improve the hearing and diminish the subjective noises. (2) In 62½ per cent. of the cases there was an improvement of the hearing, while in 12½ per cent. there was almost a complete restoration of the same. (3) In all cases there was a diminution of the tinnitus. (4) The same effect was obtained on the vertigo. (5) The earlier the operation be performed the better the result. (6) In none of the cases were there any complications. (7) In none of the cases was there a closing of the wound.

Haberman⁶¹ concludes after examining twelve temporal bones from seven patients who were known to have otosclerosis that it is a specific syphilitic disease. He bases these conclusions on his histological findings. The treatment must, for that reason, be antiluetic.

Rules for grafting the facial nerve upon the hypoglossal in cases of peripheral paralysis of the facial nerve are laid down by Alexander⁶². After reporting a case of facial paralysis in which the author grafted the facial upon the hypoglossal, he reviews briefly the literature on all the reported cases. From his study of the cases he concludes: (1) The grafting of the facial is not to be undertaken in any case until all other methods for restoring function have been given a thorough trial. Massage and electricity should be tried for at least six months. (2) After that time all cases are to be operated upon: (a) In which no voluntary contractions are present; (b) in which no faradic reaction is present; (c) in which the galvanic reaction becomes less in spite of the treatment, a result is to be expected in cases which are older than six months, only when there is a trace of galvanic reaction remaining. (3) If there is a prompt faradic reaction, even in old cases, conservative treatment is justifiable.

BIBLIOGRAPHY.

1. St. Louis Medical Review, September, 1904.
2. Journal American Med. Assn., October 1, 1904.
3. Therapeutische Monatsschrift, April, 1904.
4. Monatsschrift fuer Ohrenheilkunde, November, 1904.
5. American Medicine, January 4, 1904.
6. The Laryngoscope, March, 1904.
7. Archiv fuer Laryngologie, Band 15, No. 2.
8. Ibid, Band 15, No. 3.
9. Ibid, Band 15, No. 9.
10. Ibid, Band 15, No. 26.
11. American Med. Assn., October 27, 1904.
12. Laryngoscope, October, 1904.
13. New York Med. Jour., September 17, 1904.
14. Deutsche Med. Wochenschrift, June 2, 1904.
15. Berliner Kl. Wochenschrift, LI, No. 9.
16. Archiv. Internat. d Otol., etc., d. 820, 1904.
17. British Med. Jour., July 16, 1904.
18. St. Petersburg Med. Wochenschrift, November 4, 1904.
19. Jour. of Laryngology and Rhinology and Otolaryngology, September.
20. American Medicine, April 2, 1904.
21. Monatsschrift fuer Ohrenheilkunde, June, 1904.
22. Verhandlungen Sued Deutscher Laryngologen, 1904.
23. Laryngoscope, February and November, 1904.
24. Annals of Otolaryngology, p. 535, 1904.
25. Zeitschrift fuer Ohrenheilkunde, February, 1904.
26. Laryngoscope, April, 1904.
27. Archiv. fuer Laryngologie, Band 15, No. 23.
28. Ibid.
29. Archivio Italiano di Otolaryngologia, XV., No. 4.
30. Laryngoscope, April, 1904.
31. Annals Otolaryngology, September, 1904, p. 526.
32. Columbus Med. Journal, April, 1904.
33. Monatsschrift fuer Ohrenheilkunde, January, 1904.
34. American Med. Ass'n Jour., October 29, 1904.
35. Verhandlungen Sued Deutscher Laryngologen, 1904.
36. Jour. Med. Ass'n, October 29, 1904.
37. Laryngoscope, February, 1904.
38. Revue Heb de Laryngologie, January 13, 1904.
39. N. Y. Med. Jour., August 13, 1904.
40. British Med. Jour., March 19, 1904.
41. Archiv. fuer Laryngologie, Band 16, Heft 2.
42. Annals of Otolaryngology, September, 1904.
43. Monatsschrift fuer Ohrenheilkunde, September, 1904.
44. Laryngoscope, October, 1904.
45. Ibid.
46. Jour. Am. Med., October 29, 1904.
47. Annals of Otolaryngology, September, 1904, p. 498.
48. Lancet, November 5, 1904.
49. Monatsschrift fuer Ohrenheilkunde, March and April, 1904.
50. Med. Record, September 17, 1904.
51. Deutscher Med. Wochenschrift, Vol. 30, No. 40.
52. Jour. A. M. A., January 2, 1904.
53. Monatsschrift fuer Ohrenheilkunde, May, 1904.
54. Archiv. fuer Laryngologie, Band 63, Heft 3, 4.
55. Annals of Otolaryngology, March, 1904.
56. London Lancet, June 4, 1904.
57. Transactions of Am. Otolaryng. Society, 1904.
58. Annals of Otolaryngology, March, 1904.
59. N. Y. Med. Jour., July 30, 1904.
60. Zeitschrift, July, 1904, p. 320.
61. Archiv. f. Ohren., Band 60, S. 37.
62. Ibid, Band 62, Heft 1 and 2.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

ANATOMY AND PHYSIOLOGY.

A valuable paper on the circulation and nutrition of the eyeball has been contributed by Leber. The work is very exhaustive and allusion will be made to a few of the more important points only. He denies the existence of an anastomotic system of lymph spaces in the cornea, which is, in his opinion, nourished by diffusion. The influence of the nerves on circulatory and nutritive changes in the eye is small. True arterial pulsation, as found in Basedow's disease and aortic insufficiency, must be carefully distinguished from that observed in glaucoma, which is due to the difference between intraarterial pressure and the resistance encountered by the blood stream. Excision of the superior cervical ganglion is followed by transitory diminution in intraocular tension, the tension rising again before the disappearance of hyperemia, which is often persistent. Leber denies a trophic influence of the fifth nerve on the cornea, and holds that the essential factors in the causation of neuroparalytic keratitis are loss of sensibility and diminution of moisture.

Elschnig contributes a paper on the causation of the light reflex from the retinal arteries. In a case of embolism of the central artery, where pressure failed to elicit pulsation, he noted nevertheless a distinct arterial reflex, thus confirming the original explanation of Jaeger, that the reflex was due to reflection from the vascular walls, and disproving the theory of Dimmer, who attributed the reflex to the axial stream. "Nose-blinking," a curious phenomenon consisting in the contraction of a portion of the levator angulae oris alaeque nasi coincident with the contraction of the orbicularis palpebrarum, has been described by Harman. It affects a strip of muscle extending from the inner canthus to the anterior extremity of the nostril. "On the supposition that the facial nucleus is the proper source of the innervation of the orbicularis palpebrarum, the blink may be explained as a result of a reflex from the conjunctiva by the trigeminal nerve and its nucleus, through the neighboring nucleus of the facial to the orbicularis, which acts as the guard of the conjunctiva."

Henderson and Starling detail the results of experiments on dogs to determine "The Influence upon the Intraocular Pressure of Changes in the Intraocular Circulation." They arrived at the following interesting conclusions: (1) The intraocular pressure is a function of the blood pressure in the ocular blood vessels. (2) The intraocular pressure rises

and falls with the general arterial blood pressure. (3) Stimulation of the head end of the sympathetic causes a preliminary rise of intraocular pressure, due to contraction of the unstriated orbital muscle, followed by a slow fall occasioned by contraction of the intraocular blood vessels. (4) Stimulation of the peripheral end of the divided root of the fifth nerve causes a rise of pressure which is due to contraction of the unstriated orbital muscle. (5) There is no evidence of vasodilator fibers either in the fifth or in the cervical sympathetic nerves.

The problem of the mechanism of accommodation, always a fascinating one, has received particular attention from Grossman, who had the extraordinary good fortune to encounter a case of congenital absence of the iris with a "chalk mark" at the anterior and posterior lenticular poles—truly an ideal subject for experimentation. He found (1) that during accommodation, the anterior surface of the lens became conical. (2) After the instillation of eseriu, there was a tremor of the lens, indicating a slackening of the zonula. (3) The ciliary processes move toward the visual axis, but not toward the cornea. (4) The equatorial circumference decreased but remained circular. (5) The antero-posterior diameter of the lens increased by fully one-third. (6) The anterior surface of the lens approached the cornea, the lens itself not moving forward.

The subject of the anatomy of the orbit has been enriched by the publication of a series of very beautiful plates based on transverse sections of the decalcified orbit in the new born (Rochon-Duvigneaud). Pino advances a new theory in explanation of erythropsia. He states that when white light has bleached the visual purple it is perceived as yellowish green light. Erythropsia is then the complementary after image of this green light.

CONGENITAL ABNORMALITIES.

Parsons observed a congenital anterior staphyloma in the left eye of a child three days old. There was no anterior chamber and the iris was adherent to the pseudocornea. Intrauterine perforation of the cornea was deemed responsible. Moissonnier and Knapa report cases of hereditary aniridia, one in a mother and two daughters, another in a father and son. A very unusual case of bilateral orbital meningocele is described by De Britto. The tumors were oblong and occupied the whole of the inner angles of each orbit and side of the nose, extending down to the alae nasi. No aperture could be found in either orbit.

Congenital word blindness, although strictly speaking not within the province of ophthalmology, has engaged the attention of several ophthalmic surgeons, notably Hinshelwood, Lechner and Wernicke. It is extremely important that ophthalmic surgeons should be familiar with this type of cerebral defect as the parental assumption of a refractive error leads to the selection of an oculist as the adviser in these cases.

PATHOLOGY AND BACTERIOLOGY.

The bacteriology of the conjunctivitis of measles has been investigated by Schottelius. Fifty-one cases out of eighty showed the orange-red or lemon-yellow variety of the staphylococcus aureus and staphylococcus albus. In severe and fatal cases streptococci were present. A very suggestive paper on the experimental production of inflammations of a phlyctenular nature is contributed by Bruns. The occurrence of phlyctenular keratoconjunctivitis in tuberculous children is a matter of everyday clinical observation. Bruns injected into the external carotid of rabbits a suspension of dead tubercle bacilli, and observed shortly afterward appearances resembling phlyctenular conjunctivitis. The phlyctenules differed from those of the human affection in that they were smaller and did not ulcerate.

INSTRUMENTS AND APPARATUS.

Ophthalmometric mires of complementary colors, as red and green, are suggested by Streit. These colors, producing white when superimposed, render possible a more accurate determination of contact. In the operation for cataract, when the iris drops in front of the Graefe knife, the usual procedure is to cut out, despite the accident, thus performing rather a ragged iridectomy. To meet this emergency, Melville Black withdraws his Graefe and introduces a special probe-pointed knife, which is worked up over the iris and out at the counter puncture. The section is then completed in the usual manner.

THERAPEUTICS.

A method to hasten the absorption of corneal infiltrates, which, although not altogether new has of late years fallen into disuse, has been revived by Manolesco. Briefly, it consists of the dropping of hot water at 70 to 80 C. into the conjunctival sack for several minutes twice a day. Two new ocular anesthetics, Stovaine and Yohimbine, have been investigated by De Lapersonne and Claiborne and found not to possess any notable advantages over cocaine. Of the organic silver compounds, argyrol is coming to be regarded more and more as the one indispensable one. Ichthargan, the silver salt of ichthyol appears, according to the reports of Guttman and Falta, to be especially efficacious in the treatment of trachoma in all stages. The introduction of Roemer's pneumococcus serum has marked a real advance in the therapy of hypopyon-keratitis. Zeller was able to substantiate the satisfactory results of Roemer. In one case, however, it seemed probable that the injection bore an immediate etiological relation to the development of a myocarditis. Of great interest is the successful employment by Fromaget of a 2 per cent. solution of gelatin serum as an injection into the skin of the abdomen in a case of relapsing hemorrhage into the vitreous.

Evidence confirmatory of the great therapeutic importance of iodoform rods introduced into the anterior chamber or vitreous in infected wounds of the eye has been adduced by Dimmer.

Ophthalmologists will be pardoned for assuming an attitude of skepticism when they are called upon by Domec to accept his statements as to the therapeutic efficacy of pressure massage in progressive myopia. It should be remembered that similar methods have in the past been enthusiastically recommended and as enthusiastically rejected after thorough test. Visual improvement, the cessation of the myopic process and retrogression of fundus changes are claimed.

It is a little premature to indicate the precise limitations of radiotherapy as applied to ocular diseases. Workers in this field have shown especial activity in applying the rays to cases of trachoma, and the earlier successful results of Mayou have been duplicated. Geyser and others have supplemented the use of the rays by the application to the conjunctiva of a high frequency electrode. The present status of the subject may be summed up as follows: (1) In epithelioma and rodent ulcer of the eyelid radiotherapy surpasses all other methods of treatment; (2) in selected cases of trachoma radiotherapy offers the possibility of rapid cure; (3) the method is worthy of trial in cases of vernal conjunctivitis, tuberculosis of the conjunctiva, orbital sarcoma and carcinoma and in recurrence of glioma after operation; (4) the treatment is without danger to the function of sight.

The widespread popular interest in the subject of radium and its peculiar properties has led to the dissemination (principally through the agency of the popular magazines) of various statements which are distinguished more for sensationalism than accuracy. A paper by London on "The Action of Radium Rays in Relation to Vision," in which the author assures us that by the appropriate application of radium certain types of the blind can again be made to see, excited considerable attention. Shortly after a Viennese lay journal published an article by the same author, entitled "Hope for the Blind," which contained even more extravagant statements. The Viennese authorities then commissioned Greef to go thoroughly into the subject with the view of ascertaining what measure of benefit was likely to be obtainable. The latter is careful to distinguish two effects of radium: (1) Its property of causing certain substances to become fluorescent; (2) the special light rays of radium itself. Upon an absolutely blind eye radium has no effect. An eye blind from opacity of the cornea can be made to read letters of large size cut out of metal and placed behind a fluorescent screen, but (and herein lies the amusing aspect of the whole question) the same result can be obtained by placing the cutouts in front of an ordinary light. In other words, the impression of the letter is gained from the shadow cast upon the cornea by ordinary light.

The therapeutic application of radium in ocular disease is reported by

Williams who gives an account of a case of uveitis and opacity of the cornea in which vision was raised from 1-10 to 5-10. His experience with this agent in trachoma has been limited, but encouraging.

OPERATIONS.

It is becoming more and more evident to ophthalmic operators of widest experience that the principles of asepsis laid down for the conduct of general surgical procedures must be modified to conform to the special conditions of ophthalmic surgery. Gifford's paper, "The Essentials and Non-Essentials of Ophthalmic Asepsis," shows very clearly that it is impossible to rid the conjunctival sac of all germs which may, under certain circumstances, become pathogenic. The surgeon who imagines that by rinsing the conjunctival sac with a 1-5000 bichloride solution he is attaining even measurable asepsis is harboring an amiable delusion. The following measures are suggested: Operations in the presence of disease of the tear passages should be preceded by ligation or cauterization of the canaliculi or extirpation of the sac. In lid operations, the skin should be scrubbed carefully with sterile swabs and then painted with a 4 per cent. silver nitrate solution. In all operations on the globe the lashes should be cut off, the roots scrubbed with benzine swabs and then anointed with zinc oxide ointment. The conjunctiva should be irrigated with a freshly sterilized normal saline solution. A simple scrubbing of the hands is deemed sufficient preparation for the surgeon.

Several modifications of the classical operation for the extraction of cataract have been proposed. Chandler has sought to combine the advantages of the simple and combined operations by excising ("button-holing") a small piece of iris near its root. He thus avoids the unsightly coloboma, preserves the circular shape of the pupil and yet affords drainage for the aqueous. The removal of cortex is also facilitated. On the basis of an enormous experience in India (8,500 operations) Henry Smith recommends extraction of the lens within its capsule, either with or without iridectomy. Visual results are excellent and there is a striking immunity from iritis and secondary cataract. With a view to avoiding secondary operation after extraction Barek makes two crescentic-shaped incisions which join above the center of the lens. The triangular flap thus formed falls forward, the upper portion retracts and a clear central pupillary area results. Quackenboss obviates the danger of infection from a mucocoele complicating cataract by entering the puncta with a probe and tying both canaliculi from within out. The multiplicity of the operations for ptosis is evidence of the inadequacy of any one procedure. The latest offering is from Parinaud whose method consists essentially in the passage of a thread in such a manner that the raw edge of the tarsal cartilage is brought into contact with the superior rectus muscle, with the result that eventually organic union be-

tween the two is established. The operation leaves no external mark; it raises the lid to its normal height when the eye is looking straight forward, provides for its elevation when the cornea is turned upwards, and allows the lids completely to cover the eye on their closure. As a substitute for enucleation of blind, painful, glaucomatous eyes, Froelich advocates trephining the sclera. After laying back a conjunctival flap he cuts out a button of sclera, taking care not to injure the choroid. The deeper tunics burst under pressure of the vitreous. Subsequent immunity from inflammation and pain is claimed.

TRAUMATISMS.

An extraordinary case is related by Scrinì. The patient was struck a smart blow on the eye. Whenever he blew his nose (and at no other time) the eye bulged forward and monocular diplopia was observed. Emphysema was absent. Scrinì assumes a fracture of the inner orbital wall and a pushing of the nasal mucous membrane into the orbital cavity whenever the intranasal pressure was raised. Geisler details a case of detachment of the iris from the ciliary corona accompanied by partial inversion, *i. e.*, the pigment layer of the iris was directed anteriorly, the anterior surface of the iris resting on the anterior surface of the lens.

TUMORS.

The position of chloroma in the classification of tumors has long been a disputed one. Chloroma, as its name implies, is a greenish neoplasm, malignant and usually multiple. Of the sixteen cases in literature, fourteen involved the orbit. Cirincione and Calderaro encountered a case in which the tumor involved both orbits. Secondary tumors were situated in the temporal and thigh muscles and over the sacrum. At autopsy, tumor patches were found on the inner surface of the cranium. Microscopically, the tumors were found to consist of long cells with transparent prolongations, large, many-sided cells, with round nuclei and semitransparent protoplasm, and small rounded cells like leukocytes. In the growing portion of the tumor the capillaries were numerous. The point of especial interest is the fact that the sacral tumors in which the green color was most intense harbored numerous foci of microbes. The authors conclude that chloroma has no claim to a special place in the classification of tumors, and that the green color is probably due to the presence of "accidental" chromogenic bacteria.

A contribution to the prognosis of malignant tumors of the choroid is presented by Hirschberg. Out of forty cases under observation for a sufficient length of time, a little over half were free from local recurrence or metastasis. Deaths from metastasis usually occur within two and a half years of operation. Early operation is imperatively indicated.

SYMPATHETIC OPHTHALMIA.

The possibility of restoring even a modicum of vision to eyes blind from sympathetic ophthalmia, has hitherto seemed unfortunately remote. It is gratifying, therefore, to note the successful operative devices of Brown and Stevenson. They found that removal of the lens, even when accompanied by the excision of a piece of the iris, was followed by the formation of a false membrane, which failed to yield satisfactorily to repeated needlings. One great drawback in operating on this class of cases is the excessive reaction which is set up by the procedure. These authors found that this reaction could largely be obviated by thoroughly irrigating the anterior chamber with normal saline solution. The formation of a secondary membrane was not prevented, but a single needling resulted in the immediate retraction of this membrane and the establishment of a clear and permanent central opening.

GLAUCOMA.

Theories in explanation of the glaucomatous process continue to exercise their fascination. Zimmermann assumes that the primary cause is to be found in a difference between the general vascular tension and that of the eye. Decreased blood pressure leads to pulsation in the central artery of the retina, which, in the presence of other factors, leads in turn to venous stasis in the retina, and ultimately to transudation from this structure into the vitreous. The lens is thus pushed forward, the iris is pressed upon by the engorged ciliary processes and finally the root of the iris is applied to the posterior surface of the cornea and the infiltration spaces are blocked. Now ensues a *true* increase of the intraocular tension as opposed to the initial *relative* increase. This theory accounts very well for the occurrence of simple glaucoma without increased tension, as no absolute increase of tension is required to produce cupping of the disk.

As regards therapy, the author considers that as the disease is not purely local the treatment must be in part directed at the general defect and recommends the use of a powerful cardiac tonic, such as strophanthus.

REFRACTION AND OPTICAL QUESTIONS.

The operation for removal of the lens in high myopia may be said to have passed the stage of probation, and to have earned for itself a place among accepted ophthalmic operative procedures. The final results have been discussed by Gelpke, on the basis of examination from two to nine years after operation. Of 120 operated eyes, 107 showed visual improvement. The existence of macular lesions is regarded as an indication for operation, as both old and recent fundus changes were apparently improved by operation. Only three eyes were lost from detachment of the retina. Detached retina in one eye is no contraindication to operation on the

other. In fact, the only positive contraindication admitted by Gelpke is an inflammatory chorioretinitis in the equatorial region. The operation of choice is a simple discission.

Allusion was made in the review of ophthalmology for 1903 to a method devised by Holth for the measurement of the refraction, which he called kinescopy. An elaboration of this method (skiakinescopy) is now presented. To be successful, skiakinescopy presupposes tolerably good vision and a fair amount of intelligence on the part of the patient. It is not applicable in severe diseases of the macula and optic nerve, but is of value in estimating refraction in keratitis and irregular astigmatism. A device that promises great comfort to the patient in cases of keratocornis is suggested by Fox. Disks of opaque material, with apertures of various shapes, are placed over the correcting lens, the patient determining, after patient trial, which form of aperture is best suited to his eye. Fox claims great improvement in ability to do near work as well as improved distant vision.

Every ophthalmic practitioner is familiar with cases of asthenopia and eye-strain which are not relieved by the most painstaking correction of the refraction. A certain number of these cases are indubitably dependent on various nasal abnormalities, especially obstructive conditions in the frontal sinus. This particular phase of the subject is commented upon by Fish, who styles his paper "Hysterical" Asthenopia," in which he has the support of such authorities as Fuchs, Schmidt-Rimpler and Parinaud. Surely a train of symptoms dependent on an obvious anatomic lesion, and relieved immediately and permanently by the removal of the cause, should not be stigmatized as "hysterical." The term "hysterical" was applied to these cases before any definite relationship between the nasal condition and the ocular symptoms had been determined. It would seem that we are greatly in need of a revision of our terminology.

Another possible source of asthenopia and eye-strain independent of refractive error and muscular imbalance, is "the lithemic state," as pointed out by De Schweinitz. Itching, burning and formication of the lid margins; arthritic edema of the lids, appearing just within the palpebral margins; tender spots in the ciliary body, with pin-point ocular pain, are types of symptoms which often yield to the salicylates and aspirin. The existence of a subnormal amplitude of accommodation in a young person should at once raise the suspicion of diabetes.

EYELIDS.

A remarkable and unique case of conversion of the entire tarsal cartilage into amyloid is reported by Steiner. The tarsal disease was secondary to amyloid disease of the conjunctiva. Terson describes a peculiar condition characterized by relaxation and atrophy of the skin of the upper eyelids, and called by him "palpebral dermatolysis." In one case

the skin overhung the cornea to such an extent as to interfere with vision. Treatment consists in the excision of a cutaneous fold, and the insertion of deep sutures.

LACHRYMAL APPARATUS.

Primary tuberculosis of the lachrymal sac is discussed by Rollet, who reports nine cases. Chronicity, tendency to fistulous formation, and enlargement of the preauricular and submaxillary glands, are features. Prognosis is good if early radical extirpation is performed. In explanation of the relative immunity of the negro from disease of the nasal duct Santos-Fernandez has shown by dissection that the nasal canal is wider, straighter and shorter than in the white races.

The wisdom of the routine application of the probe in cases of lachrymo-nasal obstruction has been seriously called in question. The disturbance of anatomical relations, which resulted inevitably from the use of large probes of the Theobald type, has brought about a reaction in favor of smaller probes or no probes at all. Risley endeavors to restore the patency of the duct by injecting cocaine and adrenalin. In acute cases he irrigates thoroughly with peroxide of hydrogen and silver nitrate; in chronic cases, with iodine. If absolutely necessary, he probes the duct with Bowman 3 or 4, warning against the use of the smaller sizes, which, even in experienced hands, can easily create a false passage. Byers does not approve of probes at all. After clamping the upper punctum, he introduces a snub-nosed syringe into the lower punctum, and endeavors to shrink the mucous membrane of the duct by repeated injections of adrenalin without withdrawing the nozzle. In obstinate cases Schultz proposes obliterating the canaliculi by the galvano-cautery as a substitute for extirpation of the sac. The point of an electrode is introduced four mm. into the canaliculus, where it is allowed to become and remain incandescent for two seconds.

CONJUNCTIVA.

The peculiar affection of the conjunctiva, first described by Parinaud in 1889, and designated in honor of its discoverer, "Parinaud's Conjunctivitis," has engaged the attention of a number of writers during the year. The most exhaustive paper is that by Chaillous, who, in addition to reporting five cases of his own, goes into a detailed review of the literature. It is evident that the disease is not a common one, as the cases reported to date number only twenty. The clinical picture drawn by Chaillous varies in certain particulars from the original description of Parinaud, and should be familiar to ophthalmologists in order that future cases may not go unrecognized. Usually one eye only is affected. The palpebral conjunctiva is studded with granulations, which vary considerably in size and color. Between the individual granulations—and this

is a point of diagnostic importance—occur erosions of the epithelium. The preauricular, angulo-maxillary and sub-maxillary glands are enlarged, and, in about one-third of the cases, suppurate. The disease is apparently self-limited, running its course in two to three months. In striking contrast to trachoma, which, in some respects, it resembles clinically, healing takes place without the formation of scar tissue. The glands remain enlarged many months after the disappearance of the granulations. The etiology is dubious, microscopic examination suggesting a process similar to tuberculosis, though animal inoculation has proved negative. The disease with which Parinaud's conjunctivitis is most likely to be confused, is tuberculosis of the conjunctiva. Removal of the granulations by excision or galvanocautery is thought to hasten restoration to the normal.

CORNEA AND SCLEROTIC.

Papers on three closely related hereditary diseases of the cornea have been contributed respectively by Spicer, Freund and Fehr. "Hereditary Nodular Opacity of the Cornea," described by Spicer, occurred in two brothers, a sister and a daughter. The cornea presented greyish spots in the anterior layers and centrally, deeper lying greenish spots over which the epithelium was slightly raised. The outer portion of the cornea were clear. The disease is regarded by Spicer as a slowly progressive degeneration. Pathological examination has shown the presence of deposits of hyaline material and urate of soda. The anterior layers are edematous and Bowman's membrane is absent. Freund observed in two families fifteen cases, extending over four generations of what he terms "trellised opacity of the cornea." The disease commences shortly after puberty by a gradual diminution of vision, accompanied by dazzling, due to the irregular refraction of the cornea. Superficial greyish points lying just beneath the epithelium and arching it up, occupy the central portion of the cornea. In addition, there is a diffuse corneal opacity which, on magnification, appears as a trellised network. The edge of the cornea remains free from the disease. The trouble either comes to a standstill after the fortieth year or a corneal abscess results from the degeneration and abrasion of the corneal epithelium. Ultimately a dense scar is formed. In either case, vision is very greatly impaired. Most of the patients are free from hereditary taint, are, in fact, quite robust. Fehr describes a slowly progressive non-inflammatory opacification of the cornea, beginning at puberty, and rendering the subject unfit to earn a livelihood at about the age of thirty. The opacity consists of scattered white points and spots of various forms, between which were very fine greyish punctations. Central opacities are superficially situated, those toward the periphery are deeper. Peripherally, the cornea is but little affected. The corneal surface is smooth.

even, and of normal polish, a fact which serves to distinguish this type from the two just described. Fehr prefers to classify these three degenerations under the single heading of "family spotted degeneration of the cornea," regarding his cases as the third variety of which the nodular and trellised forms are the first and second.

IRIS AND CILIARY BODY.

Ewetzky contributes a very interesting paper on "Syphiloma of the Ciliary Body." The differential diagnosis offers much difficulty. A tumor forms in the ciliary region accompanied by symptoms of severe iridocyclitis. The cornea opacifies and becomes vascular. Hypopyon is observed in 25 per cent. of all cases. The disease may undergo retrogression, but is very apt to perforate subconjunctivally, ending in phthisis bulbi. In 78 per cent. of eyes attacked useful vision was destroyed.

LENS.

Grilli's investigations of the freezing point of the blood and urine in patients suffering from senile cataract has led him to the following conclusions: "From insufficient elimination of solids *via* the kidneys, and the consequent rise in osmotic tension to be found in the presence of senile kidney, in the blood and in the fluids which owe their origin to the blood (*e. g.*, the aqueous humor) the lens, which is, under normal conditions, nourished by means of endosmosis, being now surrounded by fluid of increased osmotic tension, is obliged to yield up some of its fluid and is consequently 'dehydrated'; this then produces cataract."

Zur Nedden offers, in explanation of the star-shaped opacity occurring in the posterior cortex after contusions and perforations of the cornea and anterior capsule, that the lens is dislocated *within* its capsule, thus creating a lesion of the posterior capsule, which allows vitreous to enter.

CHOROID AND VITREOUS

Primary atrophy of the choroid—*atrophia alba choroidea*—is the subject of an interesting paper by Cuperus. The patient was an old man whose vision had been failing for forty years. The peripapillary and macular regions were whitish, gradually shading into brown at the periphery. At the posterior pole the choriocapillaris were chalk white and empty. Black specks were scattered throughout the fundus. The papilla was excavated and grey and the arteries were diminished in calibre.

RETINA.

It is well known that hemorrhages are to be found in the eyes of newborn children in from 10 per cent. to 41 per cent., according to the statistics of different observers. Coburn has endeavored to ascertain whether such hemorrhage can account for the poor vision which is some-

times present in eyes without any ophthalmoscopic alterations. In the majority of cases (his material came from a maternity hospital) the hemorrhages were near the equatorial region, a finding at variance with that of former observers. They occurred for the most part in the nerve-fibre layer of the retina. No definite causative relation between these hemorrhages and congenital amblyopia was made out.

In two cases of injury to the retina, Fridenberg observed fine, white, hairlike striations of equal calibre following the usual course of the nerve fibres and originating from the site of the injury. They were regarded as sclerosed nerve fibres.

OPTIC NERVE.

Over one hundred cases of affection of the chiasm have been reviewed by Gehrung. The involvement is secondary to syphilis, malignant growths, tumor of the pituitary body, tuberculosis, aneurism, cysts, fractures at the base and atrophic changes. There is atrophy of the disks, which is usually more marked on one side. Visual failure may at first be unilateral. In progressive lesions, the uncrossed fibers become involved, and the blindness is total. A distinguishing feature is the absence of the hemianopic pupillary reaction.

MUSCLES.

An extraordinary case of congenital defect of ocular movements, combined with peculiar associated movements of the eyes, is reported by Werner, and is worthy of extended notice. There was bilateral ptosis and rotary nystagmus. When the left eye fixed, the right turned outward and downward. On attempting to look down, the left eye turned down, but the right turned outward to the canthus. On attempting to look up, the left eye turned up a little, the right returning to a central position. Both eyes possessed normal mobility to the right. To the left, the left eye moved almost to the outer canthus, the right only to the middle line. The paralyzes were made out as follows: Paralysis of the inferior obliques; right extrinsic ophthalmoplegia; partial loss of power of the muscles on the left side supplied by the third nerve; paresis of the external recti.

ORBIT.

Petit has given a good account of relapsing spontaneous hemorrhages of the orbit. Sudden irreducible exophthalmus, accompanied by edema of the lids, chemosis and restricted motion are the main symptoms. The diagnosis is confirmed by orbital puncture. In most of the reported cases vascular lesions with kidney changes or hemophilia have been coincident.

RELATIONS WITH MEDICINE.

According to Antonelli, nearly all infectious diseases are capable of giving rise to optic neuritis through direct toxic action on the nerve. The disease may assume the form either of a papillitis or a retrobulbar neuritis. Generally speaking, the prognosis is good, but prolonged complete amblyopia renders the visual outcome rather dubious. The diagnosis may be uncertain in the retrobulbar types, in which cases a determination of the light sense will be of material assistance. Influenza may give rise to both forms. A subacute papillitis, resulting in partial atrophy, is occasionally observed in typhoid. Malaria may give rise to both types. Diphtheria, erysipelas, parotitis, measles, scarlatina, variola and varicella are rarely responsible. The optic neuritis of syphilis is, according to Antonelli, divisible into three types: (1) Pronounced papillitis, a late secondary manifestation of malignant syphilis. (2) A subacute type, with slight ophthalmoscopic changes occurring in the tertiary stage of cases insufficiently treated. (3) Optic neuritis in infants the victims of congenital syphilis.

The ocular symptoms of rheumatoid arthritis have been investigated by Beaumont. The feature of special interest is a constant contraction of the visual field, which is explained by the existence of retinal vasomotor phenomena. Ephemeral ocular palsies and ptosis, with a high degree of conjunctival and corneal anaesthesia, are other symptoms. Trantas has observed in thirty-one out of forty-one cases of measles an affection of the cornea, characterized by the appearance of small gray points in the central superficial layers. The duration of the trouble is less than a week, and is regarded as a true exanthem. Cataract developing during the course of uncinariasis or hook worm disease, has been noted by Calhoun, who suggests that the impoverished condition of the blood may account for the disturbance in the nutrition of the lens.

The mass of literature dealing with the question of reflex disturbances originating in an uncorrected ametropia or muscular imbalance grows greater year by year. The indefatigable Gould has missed no opportunity of trumpeting his radical views. Dr. Gould is thoroughly imbued with the spirit of the reformer, and is intensely sure of the correctness of his views. It is to be feared, however, that his zeal and pugnacity give to his papers a flavor rather polemical than judicial. An attitude which is strongly suggestive of that of the political "spellbinder" may be necessary to arouse to enthusiasm the lethargic mind of the average auditor, but it is certainly not conducive to a calm weighing of the *pros* and *cons*. Doubtless many of Dr. Gould's contentions will in time become part and parcel of accepted medical truth; yet it seems equally certain that many will eventually be relegated to the limbo of medical error. A note in protest has been sounded by some of our most emi-

because in the nature of things he will represent the force by which the medical profession as a whole moves forward. So, on closer examination, the immense activity in productive effort which finds its expression in the output of papers all over the world is seen to have a very definite, although an altogether unconscious, purpose.

There is generally found in books dealing with profound problems in a profound way something that may be twisted into a medical application, and as the mind of the physician grows more philosophical with his increasing experience with human life, so increases his ability and his desire to draw from various sources enlightenment for his special task. Frequently from books of a non-medical sort there often come to him points of view which illuminate some of the dark places of his field of thought. The charm of literature to the medical man can be seen from the fact that so often the best of them find in the closing days of their activity, in literature either actively followed or passively enjoyed, their most intense pleasure. In this regard it is well to find in such a book as Shaler's "Neighbor" an application to the subject in hand. The thought is suggested in reading this book that perhaps such an effort as is represented in this January number may be interpreted as a part of the problem which this book so ably attempts to solve. The phenomena of race contact, as studied in the experience of various kinds of peoples in their attempt to live together, form its main theme. The action and reaction of each upon the other and the result of these forces upon the individual suggest that in medicine some similar phenomena may be studied. Personal contact in a large way between physicians of different races is rare and so, as a rule, the work which is being done in different lands under different conditions would remain unknown except to the favored few who could see for themselves. There remains then the contact through literature. It is to be remarked that the problem from a medical point of view is very nearly always the same. There is something universal in disease and with a constant problem the method of its solution becomes all the more interesting for the reason that every one knows something of it, even in its final form. The contact through literature can be well studied through such reviews as are here presented and if the result be in line with that which is gained by human contact, that is by personal contact, then the effort made to write them is not one bit too great. Contact means an increased tolerance, an awakening to better efforts and a desire to emulate the best. This has nothing to do with the personal gain which in each case may be different depending upon the lack in each individual.

A great part of any one's problem in life may be reduced to some personal defect or to a defect in the community in which he lives. How much each one's professional discomfort may be indirectly traced to bad medical conditions is a thing worth considering. It is scarcely to be wondered at that those who dwell in corrupt cities are themselves

affected, not necessarily by becoming corrupt themselves, but in a much more intangible way in the manner of his point of view, in the development of a certain cynicism, a desire for "laissez faire," a certain degree of hopelessness and helplessness. Such a man is a less valuable member of his community, simply because the bad conditions under which he lives slowly and imperceptibly are affecting him as an individual. The medical problem of greatest moment in this city at the present time is the bad condition of the city medical institutions and it is not too much to say that every physician living in St. Louis is today unconsciously affected in a personal way by it. These reviews bring together the work that has been done in hospitals all over the world, and enthusiastically done in places where such work is encouraged and where the most of it is done in public institutions and under public patronage. One cannot help, in reading of this sort of work, becoming impressed by the lack of it in this city where almost two thousand sick are allowed to grow old and die without any attempt being made to enrich medical knowledge by an adequate study of them. This is one of the lessons which this yearly review may teach to the discriminating reader.

With this retrospect the reader is asked to look over the papers here presented and to stop here and there in places where his interest lies. He is asked further to think that there is a great deal more in them than is set down and that, after all, it is this indirect effect of his reading which will be most lasting. That his enjoyment may not be lessened by this talk is the desire and hope of the writer.

BOOK REVIEWS.

PRACTICAL DIETETICS WITH REFERENCE TO DIET IN DISEASE. By ALIDA FRANCES PATTEE. Second Edition. Published by the Author. New York City. 1904.

Miss Pattee, who is instructor in dietetics at the Bellevue Hospital Training School for Nurses, has written an excellent cook-book of value in any kitchen, but most useful, of course, to the trained nurse and to the physician himself. The directions are given with enough detail so that one who is not a trained cook can carry them out. The second half of the book is devoted to diet in disease and falls much below the level of the portion devoted to cookery proper. The dietaries, for instance, for diabetes and the obese are absurd. Such matters have no place in a cook-book for nurses, and had far better be left to the physician, if only for the reason that it is always the individual patient who is dieted, never the disease. Any schematic treatment of such a subject can only be productive of harm, and here if ever a little knowledge is a dangerous thing. A number of errata mar the book. Thus, on page 239 3 is twice printed for 5, an error which would be productive of curious results if not detected. An index adds greatly to the value of the book.

BEITRAEGE ZUR KLINIK DER TUBERCULOSE. Band III, Heft. 1, Wuerzburg. A. Stuber's Verlag (C. Kabitzsch). 1904.

This is a publication exclusively devoted to the subject "Tuberculosis" in all its various aspects. About 4 to 5 numbers form one volume, subscription price of which is mk. 16.

This number contains articles on erythema induratum, on tuberculosis and sanitariae on the origin and spread of tuberculosis in two German villages, on affections of the upper air passages in incipient phthisis and on the early diagnosis of special disease by means of comparative palpation. The number is a worthy example of this very valuable publication.

NEW METHODS OF TREATMENT. By DR. LAUMONIER. Translated by H. W. SYERS, M. D. Chicago: W. T. Keener & Co. 1904.

This translation of an altogether admirable book which in the two years that have elapsed since its publication has already become a classic in France, deserves to meet with a general welcome. It fills a long-felt need. Most books on materia medica and therapeutics are bulky and unwieldy, because they occupy themselves not only with those standard drugs concerning which the ordinary physician is full informed, and for which he never finds it necessary to consult a book of reference, but also because they devote a great portion of their space to obsolete drugs that are now hardly ever used. On the other hand, information about the newer drugs, for which the practitioner is most apt to consult them, is usually conspicuously lacking. Dr. Laumonier's little book meets just this demand. While far from exhaustive, he offers an adequate and keenly critical treatment of the therapeutic measures that he takes up for discussion. His chapters on mineralization and demineralization, on opotherapy, on serum therapy, on the yeasts, on the nutritive alterants, deserve especial mention. The little volume can be unreservedly commended to our readers.

INTERNATIONAL CLINICS. Volume III. Fourteenth Series. Philadelphia: J. B. Lippincott Co. 1904.

This issue is one of the most interesting of the series. About one-third of the volume is devoted to articles on syphilis. Dr. Ohmann-Dumesnil, of this city, has an article on the differential diagnosis of syphilitic eruptions, illustrated by a large number of extremely beautiful plates. Of the twelve papers of syphilis one-half are by French clinicians, and these stand out from among the rest for clearness of presentation and general interest. Prof. Fournier's articles in particular are delightful reading. The rest of the volume is, as usual, devoted to medicine, surgery, treatment and the specialties. A very interesting article by Dr. Manley, of New York, on "Umbilical Hernia," deserves to be singled out for special mention.

INTERSTATE MEDICAL JOURNAL.

VOL. XII.

FEBRUARY, 1905.

No. 2.

ORIGINAL ARTICLES.

INTRODUCTION TO THE SEMEIOLOGY OF DISEASES OF THE NERVOUS SYSTEM—SYMPTOMS WHICH CANNOT BE INDUCED BY THE WILL, AND THEIR MEDICO- LEGAL IMPORTANCE—A LECTURE DE- LIVERED AT L'HOPITAL DE LA PITIE.*

BY DR. J. BABINSKI, Paris.†

TRANSLATED FROM THE AUTHOR'S ORIGINAL MANUSCRIPT BY CHARLES GILBERT CHADDOCK, M. D.

GENTLEMEN:—On commencing the series of lectures that I propose to give this year I must first indicate my plan. As far as possible, my intention is to eliminate from my teaching all questions that can be studied as well in books as in the hospital, and to confine myself to the province of clinical demonstration. I shall present to you a certain number of patients, uniting them when it is possible so to do in groups in a systematic manner, and while examining them in your presence I shall lay stress upon the technique to be employed in searching for and analyzing symptoms; in this way I hope to teach you semeiology, which is the foundation of clinical work. In my opinion, errors in diagnosis are much less frequently caused by false interpretation than by imperfect observation of symptoms; in other words, that errors are usually errors of semeiotics. The study of this part of neurology is, therefore, essential. It merits your closest attention, and it requires also, allow

*Copyright 1905 by Charles Gilbert Chaddock, M. D.

†A certain number of my lectures have been published in various journals without my consent, and even without submitting them to me; thus my ideas have not always been faithfully rendered, and certain errors have been made which might be attributed to me. In order to avoid any misunderstanding, I wish to state that the only articles the responsibility for which I accept entirely are the following:

(a) Anatomie pathologique des nevrites peripheriques (*Gazette hebdomadaire de Medecine et de Chirurgie*, August, 1890).

(b) Hypnotisme et Hysterie; du role de l'hypnotisme en therapeutique (*Gazette hebdomadaire de Medecine et de Chirurgie*, July, 1892).

(c) Du phenomene des orteils et de sa valeur semiologique (*Semaine medicale*, July, 1898).

(d) Diagnostic differentiel de l'hemiplegie organique et de l'hemiplegie hysterique (*Gazette des hopitaux*, May, 1900).

I desire also that hereafter it be understood that I am to be made responsible only for such lectures or lessons as have been edited or reviewed by me personally.

BOOK REVIEWS.

PRACTICAL DIETETICS WITH REFERENCE TO DIET IN DISEASE. By ALIDA FRANCES PATTEE. Second Edition. Published by the Author. New York City. 1904.

Miss Pattee, who is instructor in dietetics at the Bellevue Hospital Training School for Nurses, has written an excellent cook-book of value in any kitchen, but most useful, of course, to the trained nurse and to the physician himself. The directions are given with enough detail so that one who is not a trained cook can carry them out. The second half of the book is devoted to diet in disease and falls much below the level of the portion devoted to cookery proper. The dietaries, for instance, for diabetes and the obese are absurd. Such matters have no place in a cook-book for nurses, and had far better be left to the physician, if only for the reason that it is always the individual patient who is dieted, never the disease. Any schematic treatment of such a subject can only be productive of harm, and here if ever a little knowledge is a dangerous thing. A number of errata mar the book. Thus, on page 239 $\frac{3}{5}$ is twice printed for $\frac{5}{3}$, an error which would be productive of curious results if not detected. An index adds greatly to the value of the book.

BEITRAEGE ZUR KLINIK DER TUBERCULOSE. Band III, Heft. 1, Wuerzburg. A. Stuber's Verlag (C. Kabitzsch). 1904.

This is a publication exclusively devoted to the subject "Tuberculosis" in all its various aspects. About 4 to 5 numbers form one volume, subscription price of which is mk. 16.

This number contains articles on erythema induration, on tuberculosis and sanitarium, on the origin and spread of tuberculosis in two German villages, on affections of the upper air passages in incipient phthisis and on the early diagnosis of special disease by means of comparative palpation. The number is a worthy example of this very valuable publication.

NEW METHODS OF TREATMENT. By DR. LAUMONIER. Translated by H. W. SYERS, M. D. Chicago: W. T. Keener & Co. 1904.

This translation of an altogether admirable book which in the two years that have elapsed since its publication has already become a classic in France, deserves to meet with a general welcome. It fills a long-felt need. Most books on materia medica and therapeutics are bulky and unwieldy, because they occupy themselves not only with those standard drugs concerning which the ordinary physician is full informed, and for which he never finds it necessary to consult a book of reference, but also because they devote a great portion of their space to obsolete drugs that are now hardly ever used. On the other hand, information about the newer drugs, for which the practitioner is most apt to consult them, is usually conspicuously lacking. Dr. Laumonier's little book meets just this demand. While far from exhaustive, he offers an adequate and keenly critical treatment of the therapeutic measures that he takes up for discussion. His chapters on mineralization and demineralization, on opotherapy, on serum therapy, on the yeasts, on the nutritive alterants, deserve especial mention. The little volume can be unreservedly commended to our readers.

INTERNATIONAL CLINICS. Volume III. Fourteenth Series. Philadelphia: J. B. Lippincott Co. 1904.

This issue is one of the most interesting of the series. About one-third of the volume is devoted to articles on syphilis. Dr. Ohmann-Dumesnil, of this city, has an article on the differential diagnosis of syphilitic eruptions, illustrated by a large number of extremely beautiful plates. Of the twelve papers of syphilis one-half are by French clinicians, and these stand out from among the rest for clearness of presentation and general interest. Prof. Fournier's articles in particular are delightful reading. The rest of the volume is, as usual, devoted to medicine, surgery, treatment and the specialties. A very interesting article by Dr. Manley, of New York, on "Umbilical Hernia," deserves to be singled out for special mention.

INTERSTATE MEDICAL JOURNAL.

VOL. XII.

FEBRUARY, 1905.

NO. 2.

ORIGINAL ARTICLES.

INTRODUCTION TO THE SEMEIOLOGY OF DISEASES OF THE NERVOUS SYSTEM—SYMPTOMS WHICH CANNOT BE INDUCED BY THE WILL, AND THEIR MEDICO- LEGAL IMPORTANCE—A LECTURE DE- LIVERED AT L'HOPITAL DE LA PITIE.*

BY DR. J. BABINSKI, Paris.†

TRANSLATED FROM THE AUTHOR'S ORIGINAL MANUSCRIPT BY CHARLES GILBERT CHADDOCK, M. D.

GENTLEMEN:—On commencing the series of lectures that I propose to give this year I must first indicate my plan. As far as possible, my intention is to eliminate from my teaching all questions that can be studied as well in books as in the hospital, and to confine myself to the province of clinical demonstration. I shall present to you a certain number of patients, uniting them when it is possible so to do in groups in a systematic manner, and while examining them in your presence I shall lay stress upon the technique to be employed in searching for and analyzing symptoms; in this way I hope to teach you semeiology, which is the foundation of clinical work. In my opinion, errors in diagnosis are much less frequently caused by false interpretation than by imperfect observation of symptoms; in other words, that errors are usually errors of semeiotics. The study of this part of neurology is, therefore, essential. It merits your closest attention, and it requires also, allow

*Copyright 1905 by Charles Gilbert Chaddock, M. D.

†A certain number of my lectures have been published in various journals without my consent, and even without submitting them to me; thus my ideas have not always been faithfully rendered, and certain errors have been made which might be attributed to me. In order to avoid any misunderstanding, I wish to state that the only articles the responsibility for which I accept entirely are the following:

(a) Anatomie pathologique des nevrites peripheriques (*Gazette hebdomadaire de Medecine et de Chirurgie*, August, 1890).

(b) Hypnotisme et Hysterie; du role de l'hypnotisme en therapeutique (*Gazette hebdomadaire de Medecine et de Chirurgie*, July, 1892).

(c) Du phenomene des orteils et de sa valeur semiologique (*Semaine medicale*, July, 1898).

(d) Diagnostic differentiel de l'hemiplegie organique et de l'hemiplegie hysterique (*Gazette des hopitaux*, May, 1900).

I desire also that hereafter it be understood that I am to be made responsible only for such lectures or lessons as have been edited or reviewed by me personally.

me to emphasize, long apprenticeship, unremitting work, just as do diseases of the lungs and diseases of the heart.

Symptoms may be divided into two categories—subjective and objective.

Subjective symptoms, as their name implies, are such as the physician cannot measure or investigate by his own senses, and which the patient alone perceives; pain and sense of fatigue, for example, are subjective phenomena. Usually it is for troubles of this kind that the patient seeks the advice of the physician, and ordinarily the physician must take them into account in diagnosis, prognosis and treatment; but since there is no way of estimating them rigorously or of measuring them, and since even their reality can never be demonstrated, they deserve to occupy only a secondary place in semeiology. What I have just said will undoubtedly strike you as strictly true if you consider the diversity of symptoms which auto-suggestion and suggestion are capable of causing, or if you consider the fact that in many cases we may justly doubt the sincerity of the person we are called upon to examine. For example, take the case of an individual that has been injured and who asks the law to award him damages. He declares that he is in severe pain, that he can no longer work, that the slightest effort exhausts him, that his mind is enfeebled, that he cannot think connectedly, that his memory is enfeebled—in a word, that, aside from his suffering, he is no longer able to earn his living. The expert called to examine such a patient could not possibly give a scientific opinion of the condition if his conclusions were based simply upon such statements. In such a case the expert must limit himself to an enumeration of the statements of the interested patient, indicating, if it seem justifiable, the impression which the patient's statements have made upon him from the point of view of veracity; but he cannot guarantee their genuineness because it is impossible to testify concerning the nature of purely subjective phenomena.

Objective phenomena are such as the physician himself is capable of perceiving, the presence of which he notes, if he be a good observer, and in the appreciation of which he is in no sense at the mercy of the patient. It should be noted, however, that among these symptoms there are some which, properly considered, should be relegated to the first rather than to the second group, and which, in spite of appearances, have no great semeiologic importance. Paralysis, that is, loss of voluntary movement, is a symptom of this kind, at least when it does not present certain features which I shall try to indicate later. From some points of view paralysis may be considered as an objective sign; for example, if, after having raised the patient's limb and having told him to hold it up without support, it fall inert, naturally we have before us a fact which is seen, and which is, consequently, objective; but in reality this condition may depend entirely upon an idea, upon the state of mind of the subject under observation; it may be the result of auto-

suggestion or of simulation, which in themselves are merely subjective phenomena. Objective phenomena of the greatest value are those that cannot be induced by the will. Gentlemen, you cannot study these too attentively, for it is only by virtue of knowledge of such symptoms that you can make a diagnosis rigorously precise, and solve, either as experts or army surgeons, certain problems which have great social importance. In the following lessons I shall try to describe for you in the minutest manner the objective symptoms of this kind; to-day I shall limit myself to the review of them in demonstrating by some examples the preponderance of their role.

You are consulted by a patient who complains of having had, for some time, headaches which interfere with his usual occupation and prevent sleep; of loss of strength, gastric troubles—nausea and vomiting. What is the matter? Is it an organic affection or a purely neuropathic state—neurasthenia, hysteria—or a related condition? Of course, from the character of the subjective symptoms enumerated and the facts learned concerning the individual's history and his habitual state of mind and morals, you may be able to form an opinion that has some chance of being correct, but you can never do more than make a probable diagnosis, and you will reach no result without much careful questioning and painstaking investigation. If, now, examining the patient with an ophthalmoscope, you note the objective sign which characterizes edematous neuritis (disc), you are immediately enlightened, for these signs, it is hardly necessary to say, cannot be produced voluntarily. They have a weight incomparably greater than that of all the statements made to you; their presence allows you to conclude with certainty that there exists an organic intra-cranial lesion—cerebral edema, symptomatic of a neoplasm, no matter whether you are dealing with a patient whose good faith you have every reason to suspect—a simulator by profession. The ophthalmoscopic signs, for the reason I have just indicated, all have capital value. They indicate the existence of a lesion, and in many cases enable you to determine its nature. Indeed, an ophthalmoscopic anomaly constitutes more than a simple sign of lesion—it is a lesion of a portion of the nervous system, of the optic nerve, which can be determined during life, thanks to the aid of the ophthalmoscope. Besides, it permits a conclusion concerning the existence of a more extensive affection of the nerve centers. Again, when we consider that ophthalmoscopic anomalies are very frequent manifestations in common affections of the nervous system—syphilis, tabes, which is nothing but a form of nervous syphilis; certain intoxications, particularly alcoholic; insular sclerosis, which is probably due to an infection or an intoxication—we are led to the conclusion that the study of ophthalmoscopy becomes the duty of the neurologist.

I have said that paralysis could be induced by the will, but so induced it always wants certain particular characteristics. I wish to enlighten

you immediately, in part, on this subject by considering this law: that the will cannot induce paralyses identical with those which depend upon organic alterations of nervous tissue. Consider, for example, radial paralysis (musculo-spiral); certainly, wrist-drop may be voluntarily induced, and it is possible to simulate lack of power to extend the fingers on the hand and the hand on the forearm; but that which no one can do is to dissociate at will, as does involuntarily the patient suffering with radial paralysis in energetic flexion of the forearm on the arm, the contraction of the anterior muscles, and that of the long supinator. Cause the patient in question to make this movement, and you will note that the long supinator remains flaccid, while in the normal individual you will note the prominence of the supinator whenever the biceps is energetically contracted.

Let us borrow other examples from ocular pathology, the importance of which we have already had occasion to note, and which in so many respects is of the greatest interest in neurology. Paralysis of the third pair, as well as of the sixth pair, causes, among other symptoms, some that may be imitated by the will: for example, diplopia, which may be a subjective phenomenon, and which in reality makes it impossible for the patient to move the eye in this or that direction—a condition which may be simulated to a certain degree: but, beside the fact that complete paralysis of the third pair causes mydriasis and immobility of the pupil which cannot possibly be induced by the will, simulated diplopia can be easily determined by tests made with colored glasses; but, moreover, paralysis of the motor oculi, even when it is partial—for example, when it affects the internal rectus, and peripheral paralysis of the sixth pair—causes a degree of strabismus which appears generally in a state of rest, probably owing to a tonic action of the antagonist deprived of counter-resistance: and this strabismus is accentuated when the patient attempts to look at an object placed on the side of the paralyzed muscle, because under such circumstances the normal eye alone moves. Such strabismus cannot be induced mentally, for the will exerts no action on muscular tone, and the will cannot unyoke the associated movements of the two eyes. This disturbance of synergy of the internal rectus and the external rectus, is an objective sign of still greater importance, because it makes it possible to distinguish a paralysis of the sixth pair due to a peripheral lesion, from that caused by a lesion of the nucleus of this nerve; for, although with lesion of the nucleus there is strabismus, this anomaly is not increased when the patient attempts to look toward the paralyzed side. This phenomenon doubtless is due to the fact that the nucleus of the sixth pair sends some nerve fibres to the internal rectus of the opposite side, and consequently the nuclear paralysis of the external rectus of one eye is thus associated with a paresis of the internal rectus of the other eye. Here is a patient, the analysis of whose symptoms will permit you to note the interest which attaches, from a

diagnostic point of view, to paralyzes of the motor oculi and dissociation of movements which normally take place with synergy. This woman is subject to attacks that are manifestly hysteric. She was sent to me by a physician who, having noted, a short time after one of her attacks, facial asymmetry, thought that the condition was one of hemispasm of hysteric nature. You can see that the right labial commissure in repose is at a higher level than the left commissure, and that this condition is increased when the patient brings the muscles of the face into action; when she speaks, the right commissure is drawn markedly upward and outward, and the lines of the face are very marked on the right side, as if on that side there were spasmodic action of the muscles. But we must determine whether this facial asymmetry is really due to spasm or to paralysis of the face: in fact, you must be struck by this characteristic, hardly to be observed in hysteric hemispasm: namely, that when the patient is told to close her eyes, the right eye alone is shut. This lack of closure—is it dependent upon paralysis of the orbicularis? How shall we answer this question? The simple fact that the patient does not shut an eye when told to do so, is in no sense characteristic, for such a condition may be due to volition: but, on examining the patient attentively, it will be seen that she tries to close her eyes. You will note that the left eyeball is moved forcibly upward while the eyelid remains immovable. This phenomenon, known as Bell's sign, is due to an association of alterations of the facial nerve with integrity of the motor oculi, and it permits us to decide that the patient is suffering with paralysis and not with spasm: and, besides, we can state with certainty that this paralysis is not psychic, for this dissociation of movement, this variety of asynergy, cannot possibly be imitated.

There is one kind of asynergy related to a lesion of the region associating the medulla, the pons and the cerebellum, concerning which I cannot now go into detail, but which I shall consider in a lesson to follow, and which presents various characteristics which it would be difficult or impossible to imitate voluntarily. I now call your attention only to a disease which seems to be a form of this asynergy located in the ocular apparatus—I refer to nystagmus, which often accompanies nuclear paralysis of the sixth pair, and which cannot be simulated.

I have previously stated that in complete paralysis of the third pair the pupil is immobile, and this means that reflex movements are wanting. But abolition of the reflex to light may also be observed in two other different conditions. On the one hand, it may exist independently of any other ocular disturbance, and then, when it is permanent, it is a sign of great value. This form of the abolition of the reflex to light may be subdivided into several subsidiary varieties. Sometimes it is associated with myosis and with retention of a movement of the pupil, which is usually, but erroneously, called the reflex of convergence. This subvariety, note particularly, is the only one known as the sign, or, better,

the syndrome, discovered by Argyll-Robertson. Sometimes it is associated with mydriasis. Under such circumstances, generally, the reflex of convergence is abolished, and in certain cases even the pupillary disturbances are accompanied by a paralysis of accommodation—internal ophthalmoplegia. Sometimes the pupil is diminished in size, and the reflex of convergence is, under such circumstances, sometimes present, sometimes absent: but no matter with what subvariety we have to do, abolition of the reflex to light, under the circumstances I have noted, seems to be pathognomonic of acquired or hereditary syphilis (Babinski and Charpentier), and, to be more precise, of acquired syphilitic meningitis (Babinski and Nageotte). I consider this the most remarkable sign of all the signs of neurologic semeiology, because it may be the only manifestation of a meningeal affection capable of leading up to tabes, general paralysis or disseminated syphilis of the nerve centers. It is a characteristic manifestation: it gives precise indications for treatment, and that so early that mercurial treatment may be given efficaciously: and the most important point is that it cannot be voluntarily induced.

Thanks to the cytologic examination of the cerebro-spinal fluid, Nageotte and myself were able to establish the fact that this sign is intimately related to meningitis, for it is always associated with lymphocytosis of the cerebro-spinal fluid. This leads me to say that as a result of the important work of Widal and his students on the cytology of the cerebro-spinal fluid, we have grown familiar with certain objective characteristics which permit us to recognize with certainty the existence of inflammation of the meninges. The presence, the number and the nature of the elements (lymphocytes, polynuclear cells, etc.) contained in the fluid, its composition (fibrin, albumin, chromophilic substances), give to science a diagnostic element of the greatest importance. But I must say of these characteristics what I have already said concerning ophthalmoscopic symptoms—they are more than signs of lesions: they constitute a lesion itself of a part of the nervous system, a lesion of the meninges that can be determined during life.

To return to the semeiology of the pupil. Generally, inequality of the pupil is regarded as important, but in reality, as a monosymptomatic condition, it does not seem to have any clinical value, nor has it any value when it coincides with immobility of the pupils, which alone, under such circumstances, should be taken into consideration. It is interesting under the following circumstances: the pupils being unequal, and both contracting well to light, one is normal, the other is contracted: on the side of the smaller pupil there is also retraction of the palpebral fissure and enophthalmia. This triad of symptoms, syndrome, brought to light by Claude Bernard and Hutchinson, is characteristic of a lesion of the cervical sympathetic, either in the trunk of the nerve or at its origin in the cord, or in the medulla: and neither the imagination nor suggestion nor simulation can induce it.

I need scarcely add that the inverse symptom of enophthalmia, namely, exophthalmia, which is one of the manifestations of Basedow's disease, cannot be produced voluntarily.

Finally, there is a nervous affection, diphtheritic intoxication of the nervous system, that often causes a form of ocular disturbance which is particular to it; namely, double paralysis of accommodation, coinciding with integrity of movements of the pupils. Of course, a disturbance of this kind can be feigned, for to determine the existence of this phenomenon intervention of the will of the subject under observation is required, and false statements under such circumstances might lead the physician to err; but with the aid of certain practical tests with special lenses, it is easy to detect simulation and to demonstrate paralysis of accommodation, which may, therefore, be considered as an objective sign of great value. From the various examples I have chosen, you see that ocular pathology furnishes neuropathology a large number of objective signs of capital importance.

The pathology of the larynx is much less important for a neurologist; however, under certain circumstances, laryngoscopic examination may furnish very useful information. Let us suppose that we have a patient thought to be neuropathic, hysteric; who presents disturbances of phonation, and the question arises whether we have not to do with hysteric dysphonia. If paralysis of one vocal cord is observed, a paralysis the characteristics of which cannot be induced by suggestion, it can be stated that, if hysteria be concerned in the genesis of the accidents, nevertheless it plays a role of secondary importance, and that we have to do with an organic affection of the nervous system.

You know very well that an examination of the tendon reflexes is a matter of routine practice in neurologic examinations. In fact it is essential to know the state of the reflexes because they are subject to disturbances in many nervous maladies, and they furnish indications of fundamental importance in diagnosis. Abolition of the tendon reflexes is characteristic of a lesion of the nervous system, and this is foreign to the symptomatology of hysteria. It was Westphal and Erb who first and simultaneously called attention to the absence of the knee-jerk in tabes: this phenomenon is also to be observed in neuritis and in anterior poliomyelitis. But I wish you to note that the knee-jerk, which is the only one that many physicians investigate, is not the only one that presents disturbances of interest. Absence of the ankle-jerk in certain cases makes it possible to distinguish sciatic neuritis from pseudo-sciatica of hysteric nature (Sternberg, Babinski, and Biro). Besides, it is one of the most valuable signs of tabes, appearing generally before the sign of Westphal (Babinski). Exaggeration of the tendon reflexes has no less value than abolition of them. In a case of crural paralysis the bilateral exaggeration of the tendon reflexes of the lower limbs, characterized particularly by foot-clonus, demonstrates the existence of an organic

affection, for these symptoms cannot be produced by hysteria; at least this is the opinion that I have maintained for ten years and it now seems to be quite generally accepted. It is the same in a case of hemiplegia. In a patient afflicted with hemiplegia, we observe on the paralyzed side exaggeration of the knee-jerk, the ankle-jerk, and the elbow-jerk, as well as of the bone reflexes at the wrist. This state of affairs alone permits the conclusion that you have to do with an organic hemiplegia, for hysteria cannot induce it (Babinski).

In relation to hemiplegia, permit me to mention various characteristics that I have discovered which may also aid in distinguishing organic hemiplegia from hysterical hemiplegia: muscular hypo-tonicity, combined movement of flexion of the thigh and pelvis, the sign of the platysma, the peculiar grip of the hand (*vide* Leçon sur le diagnostic différentiel de l'hémiplégie organique et de l'hémiplégie hystérique, *loc. cit.*).

Formerly the cutaneous reflexes were considered of mediocre importance; however, it has long been known that abolition or weakening on one side of the cremasteric and abdominal reflexes (Rosenbach) occurred in organic hemiplegia. We now know that cutaneous reflexes are of the greatest semeiologic importance. I have shown, and my opinion to-day is almost universally confirmed, that the cutaneous reflex of the sole of the foot undergoes ordinarily a change when there is disturbance in the pyramidal tracts: the great toe, instead of flexing normally, is moved in extension when the sole of the feet is irritated; and not infrequently, the toes are separated one from another (fan-sign). These phenomena are never observed in cases of purely hysterical paralysis.

I foresee an objection which you may make. You may say that the simulator could produce the signs that I have just mentioned. A person with normal or abolished knee-jerks might, if the tendon were struck, execute voluntarily a movement of extension of the leg on the thigh and cause the observer to conclude that the reflex were exaggerated; and inversely, the patient with exaggerated or normal reflexes might prevent the movement that should follow percussion of the tendon by voluntarily contracting the flexor muscles of the thigh and thus suggest the conclusion of abolition of the reflexes; likewise, extension of the great toe, after excitation of the sole, might be due to volition. In reply to these objections, I will say that these various signs may in fact be simulated, but under such circumstances the simulation is imperfect and not an exact reproduction: for on taking special care in analyzing these disturbances, and by studying attentively the various characteristics which belong to them, as I shall do in succeeding lessons, we always succeed, when we have experience, in distinguishing the true from the false.

The disturbances of electric excitability of the nerves and muscles offer signs of much interest from the present point of view. Doubtless you all know that the reaction of degeneration is pathognomonic of a lesion of the muscles, due to a primary or secondary alteration of

nerves; and none of the characteristics which belong to it—abolition of electric excitability of the nerves; abolition of faradic contractility (Duchenne de Boulogne); increase of muscular excitability to galvanism (Baierlacher); slowness of contraction (Remak); inversion of the normal formula (Erb)—can be voluntarily induced. Compression of a motor nerve that does not lead to degeneration of its peripheral portion may cause a modification of its electric excitability, less than the reaction of degeneration and still as remarkable and equally impossible of voluntary simulation. It consists of this: the nerve above the point of pressure loses its electric excitability, while below this point it retains its normal reaction (Erb). This is ordinarily observed in common musculo-spiral palsy.

Finally, I would draw your attention to the disturbances that are due to auricular lesions expressed in alterations of normal galvanic vertigo. These objective phenomena are unknown to the majority of physicians, yet they are of great practical importance. For example, a patient states that he has grown deaf: the aurist finds no lesion of the external or middle ear, and he has no means of determining whether the deafness is really due to an organic affection of the labyrinth or whether it is hysteric or simulated. If in such a case, with a current of fifteen or twenty milliamperes, there is neither inclination nor lateral rotation of the head, it may be said with confidence that there is a lesion of the labyrinth and that the possibility of hysteric or simulated deafness must be abandoned (Babinski). And the same conclusion would be justifiable in a case of unilateral deafness if inclination or rotation took place only toward one side, without reference to the direction of the current, or if it predominated decidedly to one side (Babinski).

Trophic disturbances and circulatory and secretory anomalies also afford elements for diagnosis of the greatest importance. It is unnecessary to insist upon the value of eschars, arthropathies, scoliosis and amyotrophy, especially when the latter is well marked and is accompanied by fibrillary twitching. Moreover, like ophthalmoscopic anomalies and lymphocytosis, these are more than signs: they are lesions symptomatic of nervous disturbances which cannot be simulated. We can say almost as much of certain circulatory and secretory anomalies. If, for example, in a case of monoplegia, monoparesis or of neuralgia in one of the lower extremities, it is noted that the leg implicated is colder than the other, that the perspiration is more abundant and the skin presents a bluish-red color, it may be affirmed that the affection is an organic one, implicating the cord or the nerves. There are still other circulatory disturbances which constitute one of the most characteristic signs of the epileptic attack, and which enable us to distinguish the latter from hysteric attacks. It is usually taught that the initial cry, the sudden fall, the complete loss of consciousness, the biting of the tongue, the presence of bloody froth on the lips, the emission of urine and the con-

secutive exhaustion, are symptoms which belong exclusively to the epileptic attack, and in fact they are of great value in diagnosis and in most cases can be utilized. But if we reflect a moment, we shall see that all these symptoms may be simulated by a person who has seen epileptic attacks and who might have a reason for deceiving the physician: however, there are signs which, without being constant, are remarked in the epileptic attack, and which are vastly more important than the preceding, for they are never observed in the hysteric attack and they cannot be simulated. These are the toe-phenomenon, of which I have already spoken, and the circulatory disturbance, namely, lividity of the face and more especially of the lips. But do not make a mistake. Simple congestion of the face during an attack should not lead to a diagnosis of epilepsy, for such a condition may result merely from voluntary effort. The circulatory disturbances must be marked: the lips must be of a leaden hue. Thus, you see, the trophic and circulatory disturbances are of great value from our point of view. Note, however, that there are some cutaneous lesions which may be due to diseases of the nervous system or to some external cause. Suppose that you have to deal with a patient who complains of violent pain in an arm or a leg and that you remark that the limb is edematous or that it presents certain eruptions. Be careful in such a case not to certify, without careful examination, that you have to deal with an organic nervous affection, for it is possible that you have before you a case of simple simulation. In fact, it is very easy to induce edema artificially by compressing the limb or allowing it to hang in a dependent position for a long time, and to cause vesication by the application to the skin of irritating substances.

I said in relation to the epileptic attack that the emission of urine, during the attack, could not be considered as a distinguishing sign, for it is a phenomenon that may be due to volition; and what I said concerning epilepsy is also applicable in general to all cases in which emission of urine is noted and seems to be involuntary. In order to avoid any misunderstanding, I must express myself more at length on this point. I know very well, of course, that incontinence of urine is a pathologic phenomenon of great value, but I would call your attention to the fact that the mere declaration of an interested individual, or even a discovery of clothing wet by urine, cannot be regarded as demonstrative; for, under such circumstances, there is nothing which shows that the emission was involuntary. In order to confirm and to certify to the fact, it is absolutely necessary to do what is usually not done, and moreover, what cannot always be done; that is, to determine that the emission presents characteristics which the will is incapable of imitating. If, for example, on examining the patient nude, the urine is seen to pass not in a jet but drop by drop, as it were by gradual accumulation, it may be stated that the phenomenon is objective and due neither to suggestion nor simulation, but that there is true incontinence of urine.

I hope that I have convinced you of the importance of being thoroughly familiar with objective symptoms that the will cannot induce. It is of capital importance in legal medicine where important interests may be at stake, especially when, in giving expert testimony concerning an accident, it is necessary to determine in the individual under observation whether he is suffering with organic nervous disorders: it is also of great importance when the problem which presents itself so often clinically, is one where it is necessary to distinguish hysteric manifestations from those due to lesions of the nervous system.

Do not forget, however, that even though you have demonstrated the presence of one or more of these signs in the patient, you are not justified in excluding simulation or auto-suggestion of a certain degree. You must know, in fact, that the association of hysteric and organic conditions is very common. The instances of this kind are complex, and in such cases it is often difficult, or even impossible, to determine exactly the share of each of these factors in the genesis of symptoms. Therefore it is even more essential to be able to determine with exactness the existence of the disturbances that cannot be engendered by the will.

As I have already said, in succeeding lessons I shall do all I can to demonstrate to you the precise characteristics of all the objective phenomena to which I have alluded, and the technique necessary in examining for them.

In conclusion, permit me to give you a final bit of advice. Examine systematically for the various objective signs, at least in the majority of cases you are called upon to examine or treat. When once you have become habituated to this, you will do it mechanically and rapidly. Thus you will often discover, much to the advantage of your patient, anomalies that otherwise would have passed unnoticed. Usually you will be able to make precise diagnoses, and, at all events, if you proceed in this way you will avoid gross errors that might be prejudicial to your reputation, and, what is still graver, errors that might do harm to those who have placed confidence in you.

170 bis, Boulevard Haussmann.

A CASE OF SEPSIS POST ABORTUM.*

BY ERNST JONAS, M. D., St. Louis.

The case I desire to present seems of interest for many reasons of practical importance: Mrs. Fannie F., Hungarian, came under my observation in the Jewish Hospital of St. Louis on April 16, 1904. Family history—Negative. Previous history—Patient eighteen years of age, married seven months, never sick before. She menstruated for the first time when twelve years old and regularly and without much trouble from that time until four months ago. Since then the menstruation has not returned. Patient imagined herself pregnant, felt as well as ever, had none of the usual complaints of pregnancy.

Present Illness.—A week before admission to the hospital the patient noticed a hemorrhage out of the vagina. The cause given for this hemorrhage was the sudden meeting with a negro at the entrance of a dark alley. Patient was frightened, fell to the sidewalk and commenced to bleed. She went to bed and soon afterwards felt a slight contracting pain in the lower part of the abdomen. About two days after the fall in the street the patient noticed a piece of flesh, about three inches in size, coming from the vagina. She handed it to the attending physician, who declared it to be the foetus. The attending physician and a consultant examined the patient very thoroughly, as she said, ordered douches and prescribed medicine. When, however, four days after this, patient began to have fever and was seized with a severe chill, she sent for another doctor. I heard from this latter doctor, personally, that he found patient in a chill with high fever. Late at night he removed a foul placenta, as he said, from the cervix, gave her a disinfecting douche, ordered several things for her apparently septic condition, and sent her to the hospital next morning.

Physicial Examination.—The first impression: Patient looks *sit venia verbo*, septic; skin feels hot and has slight icteric tinge; great malaise is apparent; the tongue is brown and parched, the pulse is quick and somewhat feeble. Patient complains of loss of appetite, great restlessness, absolute want of sleep. Patient is of medium size, well developed. Pulse 120, regular but feeble; heart-sounds, clear. Temperature is 103.2.

Respiratory System.—Negative, but breathing is rapid, thirty-five per minute. No pain in chest, no cough.

Blood Examination.—Marked leucocytosis, 20,000. Hemoglobin, 85 per cent.

Urinary System.—No urinary complaints. Urine, sp. gr. 1020; acid, clear, no albumen; no casts, no blood, no pus, no sugar.

Abdominal Examination.—Abdomen does not appear bloated, is not tender; there is no pain on pressure, except tenderness on deep pressure

*Read before the St. Louis Surgical Club.

in the hypogastric region. No abdominal dullness on percussion anywhere. Liver and spleen dullness, normal.

Digestive Organs.—No vomiting; diarrhoea.

Vaginal Examination.—Some foul reddish discharge. No bleeding. The vagina appears softer, more capacious, its mucous membrane of dark bluish hue. The external os and the whole cervical canal is open almost far enough to put a finger into the uterine cavity. The uterus lies antelected, is enlarged to about the size of a uterus at the end of the second month of normal pregnancy. The uterine wall feels soft and flabby; pressure or moving of the uterus is slightly painful. At the anterior lip there is a superficial ulcer visible of the shape and size of a bean. The ground of the ulcer has the typical dirty, grayish-yellow color of puerperal ulcers. From the uterus comes the same kind of a discharge, which we have noticed in the vagina.

Upon investigation, I heard from the last doctor in attendance that, according to his belief, the placenta and membranes were complete, but that he couldn't be absolutely certain. This was somewhat contradictory to his first statement, that he removed a foul placenta from the cervix. Such a placenta, eliminated by nature from the corpus uteri into the cervix, is almost always complete. I took some of the discharge of the corpus uteri, carefully avoiding any mixture with vaginal or cervical secretion. I then put my index finger, without difficulty, into the cavum uteri, having previously given a disinfecting vaginal and uterine douche with hot one per cent. lysol solution. On digital examination (curette is not suitable for this purpose, because the fine sense of touch is lacking), I found the cavity empty except for some small pieces of placental tissue at the placental insertion at the posterior wall of the corpus uteri. These pieces were easily removed with the finger and a large dull curette: the uterus left in situ. (Usually the finger alone is the best and only instrument for this kind of work, since it does not create new wounds in an infected uterus. But in such a case as this a dull curette, carefully handled, is preferable, because it makes the pulling and stretching of an infected uterus unnecessary, the latter manipulations being dangerous on account of the possibility of causing the spread of the infection going on in, and perhaps already beyond, the uterus, into new and so far not infected areas.) After this I flushed the uterine cavity with a one per cent. lysol solution, put a drain of iodoform gauze into the cavity, and put the patient to bed. To keep the uterus well contracted, and if possible to avoid further absorption, I ordered an ice-bag on the abdomen and thirty drops of ergot fluid to be given four times a day.

The microscopical examination of the uterine discharge revealed streptococcus infection. At this stage the question of the removal of the septic uterus was to be decided. I considered the chances of the infection being confined to the uterus as very slight, and did not resort to this

procedure. I agree with Olshausen, that as long as the septic condition has not gone beyond the mucosa, this operation is not necessary; and that as soon as the infection has crept further, there will be very little chance for the operation to be undertaken in time to prevent the spreading into the cellular tissue of the pelvis and to avoid peritonitis.

I hardly need to mention that the treatment was of a vigorously supporting nature. In addition to nutritious food in concentrated form, strychnine, strophanthus, champagne, whisky, wine, coffee, etc., were given. Quinine in doses of about five grains was given night and morning.

The second day I removed the drain and continued the above treatment, adding two vaginal douches of a hot one per cent. lysol solution. I must not forget to report that the anti-streptococcus serum, injected in doses of 20 ccm. as soon as the streptococcus infection was made certain, proved of no benefit. I injected 20 ccm. every four hours until 120 ccm. had been given. There was a remission of temperature, but with no permanent result. If the Crede ointment, used conscientiously in drachm doses, night and morning, during the whole period of fever, did any good, is of course hard to say.

The condition of the patient changed but little during the next week, except that the temperature grew higher (105.6°), the pulse became weaker and more frequent, the dyspnoea increased, and frequently the diarrhoea, without blood, was almost intolerable for the patient. On some days the urine showed albumen, but no casts; on other days albumen could not be found. Leucocytes, 20-22000. At no time was any sign of peritonitis evident. Frequent vomiting was otherwise accounted for.

Nine days after the arrival of the patient in the hospital the spleen had increased to such a degree that it was easily palpable, reaching about a hand breadth beyond the left arch of the ribs.

During the patient's entire stay at the hospital the abdomen and vagina were examined with the utmost care for any sign of localized inflammation or suppuration. The vagina was frequently examined for evidence of fixation of the cervix or of any fluid accumulation above the vaginal vault. On the eleventh day a slight resistance, thickening and fixation to the right and front of the uterus, between the bladder and uterus, could be recognized. Although the expression of the patient and all the symptoms showed that the patient was desperately ill, the discovery of this slight tendency of localization of the affection encouraged me to hope that a speedy operation, aiming at this definitive point, might be able to accomplish something. There was no doubt that the grave, septic condition of the patient, permitted no loss of time by waiting for any pronounced fluctuation. Although well aware that a good many authors object to this early operation, I was convinced that only quick action could possibly save the life of my patient, who rap-

idly grew worse. The point at which I aimed was to the right and in front of the uterus, high up between the bladder and the corpus uteri. Neither the vaginal nor the perineal route seemed to me advisable for reaching this point, located, undoubtedly, extra-peritoneally. The only other way left for me was the abdominal incision. I had, by all means, to avoid the opening of the peritoneum and the danger of peritonitis. In order to increase the extra-peritoneal field of operation, I thought it advisable to fill the bladder with a sterile solution and to tampon vagina and rectum with colpeurynter and gauze. As we know, especially from operations on the bladder, these manipulations raise the bladder directly upward above the symphysis pubis and indirectly lift that part of the peritoneum which turns from the anterior abdominal wall over to the bladder. As long as the peritoneum has not become agglutinated to the inflammatory extra-peritoneal focus, these means are of great advantage, as was very evident in my case.

Under local anesthesia I made a cut about three inches long, immediately above the inner half of Poupart's ligament, just as for ligation of the external iliac artery. I then ligated the superficial epigastric vessels and cut through the insertion of the obliquus, externus, internus and transverse abdominis muscles, and through the fascia transversalis. After this I pushed the parietal peritoneum upward and inward and advanced subperitoneally without any further cutting, along the inner surface of the horizontal ramus of the os pubis to the involved focus, between bladder and uterus. The connective tissue surrounding the focus had the characteristic oedematous look, and formed a kind of shell for a relatively small pus accumulation, giving about a tablespoonful of pus, coverslips of which showed streptococci, chiefly in long chains. Some small bridges in the pus cavity were broken up to avoid sinuses, the cavity cleaned with warm saline solution and loosely tamponed for drainage. A counter opening through the vagina was not considered necessary. The operation is easy and without danger. Accidental injuries can be easily avoided, if after cutting through muscles and fascia, we reach the focus by blunt dissection.

Although I know very well how treacherous and how grave a disease septicaemia, and, especially sepsis post abortum is, I felt that this successful operation might possibly be the beginning of the turn for the better. I felt still more encouraged when the day after this operation the temperature dropped to 101° and the pulse to about 120. However, my confidence was of only short duration. The second day after the operation the temperature rose to its usual height (104° – 105°), the pulse was weak, 140 per minute, and great dyspnoea (50–60 per minute) developed.

This characteristic picture called my attention at once to the respiratory system of the patient. (To be sure that nothing was overlooked I convinced myself that everything was right in the field of the operation.

The wound looked nice and clean, no retention of pus). There was a slight degree of immobility on the right side of the chest. On palpation this was still more evident than on inspection. Vocal fremitus was distinctly diminished, almost absent. Nearly absolute flatness existed at the back of the right side of the chest, from the sixth rib downward. The dullness passed without change into that of the liver. On auscultation only weak and very distant breathing could be heard.

These symptoms left me no doubt that I had to deal with an effusion into the pleural cavity, most likely of purulent character, in accordance with the history of the case. There was very little pain in the chest, very little cough, but very marked dyspnoea.

The condition of the patient spoke against an operation of any magnitude. For this reason alone I desisted from a resection of the rib, and after convincing myself by aspiration with a hypodermatic syringe that I had to deal with a purulent fluid, aspirated a little over a pint of hemorrhagic purulent fluid. Streptococci in profusion were found in the exudate. The dyspnoea and temperature decreased somewhat after this aspiration, but after two more days, the picture was again the same as before the first aspiration.

A second aspiration brought away a pint of fluid less purulent and less hemorrhagic. On the left and posterior side of the chest there was a slight dullness and feeble breathing noticeable and liquid rales could be detected. When aspiration proved unsuccessful I concluded that hypostatic congestion, or perhaps an embolic infarct, which had not quite reached the periphery of the lung, might be held responsible for the condition on this side. During the few days following I had given up all hope, but continued the most vigorous stimulation of the patient, day and night, and ordered a hypodermoclysis with a quart of saline solution twice a day.

After this, however, the condition of the patient improved daily and rapidly. There is but one point of importance to be added; that is, that a thrombosis of the left femoral vein developed, the pelvic exudate having been on the right side. This condition improved rapidly by keeping the limb elevated, and, five weeks after admission, the patient was without fever and had passed the danger of the septic trouble. Patient recovered her strength very quickly and was discharged two months after admission in good health, only moderately anaemic.

In conclusion, I wish to say that my main reason for reporting just this case was to lay special stress upon the importance of an early incision after discovery of a palpable abscess in the cellular tissue of the pelvis. That the suppurative process sometimes continues and creeps further has caused many operators to warn against this early operation and to advise waiting until the suppuration has reached a location more accessible. But operators, who have seen that an early opening of even a small abscess, frequently produces a quick and absolute cure, and op-

erators who have seen that, by delaying the incision, patients get weaker and weaker and finally become incurable and permanent invalids, these will gladly join the advocates of the early incision. The early extra-peritoneal incision is indicated as soon as the presence of pus in the pelvis is definitely diagnosed, may the quantity of pus be ever so small. The proper technique will enable us to reach these small abscesses in the pelvis. If this method is followed, the dreaded sequel of thrombosis or embolism may often be avoided. That in my case the repeated aspiration of the pus from the right pleural cavity sufficed, was a surprise to me, but on looking up the literature of this subject, I found reports of the same occurrence in several cases of purulent pleurisy after sepsis.

2329 Locust street.

ESOPHAGEAL STRICTURE.*

BY JOHN C. MORFIT, M. D., of St. Louis.

The diagnosis of esophageal stricture is as simple as anything in medicine. In its early stages it may give rise to few acute symptoms, and those of a transitory and inflammatory nature, unless the complications are so severe as to mask the potential stricture in early death. Should the patient recover from the immediate effects of the injury, there is a variable period of comparative ease, followed within a few weeks by gradually greater difficult deglutition and consequent loss of flesh and strength. Such symptoms, in this order and rapidity, following an accidental or suicidal swallowing of caustic chemicals, are a train of symptoms hard for a careful observer to mistake. These, however, are presumptive points, and for a positive diagnosis we have at hand more direct means in esophagoscopy and sounding. The former is not sufficiently attractive in its technique and results to supercede or equal the latter in the hands of the average examiner. The simplicity of the examination does not discount the danger of instrumental work in the gullet, and the common, if not frequent accidents attending the procedure, are evidence enough to inspire the greatest caution.

At the same time the value of the flexible bougie in determining the distance from the incisors, and the caliber, extent and elasticity of the constriction is so great in planning the treatment as to make the benefits commensurate with the risks. In malignancy a stricture that is narrow enough for harmful results had better be let alone and the hope anchored to early gastrostomy. It is in the malignant strictures that most of the accidental perforations into the mediastinum, pleural and pericardial sacs have occurred, and relatively less frequently in the very small proportion of cases of benign obstruction.

A cervical stricture, and by that I mean one situated well above the level of the sternal notch, admits of bolder attempts, because of the

*Read before St. Louis Surgical Club, December 14, 1904.

greater accessibility and less danger. The large majority of all strictures are either well above or far below this point, at the two anatomically narrower portions of the tube—the cricoid and the diaphragm levels. The finger will, therefore, gather much important information in high strictures, especially in children, as was my experience with the child whose case I present.

Should a perforation take place in the cervical region there is no doubt as to the wisdom of early esophagostomy, with external drainage and intubation. As in all surgical procedures, time is the important consideration, and the sooner radical treatment is begun the more it promises. A stricture may be impervious to ordinary food and drink, yet not a complete closure and amenable to dilation. In the case of the child I report all solid food was ejected, and much, or possibly all water that was swallowed was regurgitated.

He looked starved, and my finger made out the stricture just about the top of the larynx. I could not pass very small bougies of various sizes after repeated trials extending over four weeks. Child was so weak at the first visit that I desisted from all manipulation and gave him a little olive oil. This was readily swallowed and more than an ounce was retained. Pure Norwegian cod liver oil was prescribed and taken in sufficient quantity to revive the patient during the next few weeks, when he returned to me with complete obstruction. Examination revealed a very interesting condition. The child had been unable to swallow anything the previous twelve hours, and, on inserting my finger, the canal was found to be plugged with a piece of bread crust, on the removal of which swallowing of oil was resumed. This experience suggests the possibility of an apparent complete closure at any point in the tube. Such a food particle might very readily obstruct the passage of the bougie. Esophageal irrigation then, as a preliminary to examination or treatment, is a logical deduction and to be strongly recommended. The choice of treatment in stricture, whether benign or malignant, lies between gastrostomy and dilation either from above or from below. Dilation is to be preferred if it can be accomplished rapidly enough to effect nutrition. The post thoracic operations on or removal of the tube are attended with such a mortality as to be prohibitive. Permanent intubation necessitates preliminary dilation either retrograde or from above. Most cases of benign stricture manifest themselves some weeks after the burning has taken place. In the two cases that I report, it was five weeks in the one and six weeks in the other before surgical aid was solicited. In both instances recovery had been so rapid that the original cause was overlooked. In the man early dilation may have improved his nutrition, but it is doubtful if his life could have been prolonged in the face of the post-mortem findings. When a case is so far gone as to require rectal feeding it is about beyond operative aid. With all due respect to what is claimed for rectal alimentation,

I am loath to credit it with anything more than a transient stimulating effect. Cases are never mentioned as being supported by this method considerably longer than experimenters have lived absolutely without food. Complete stricture should be prevented, for there are few cases that can be permanently cured. In accidental or suicidal burns the sequelae should be anticipated and examination and preventive sounding performed, not immediately, but in about a week or ten days after the acute symptoms have subsided. If done before the inflammation has receded the danger of perforation is manifestly greater. This is, of course, the ideal treatment, but unfortunately there are a certain number of these cases which go untreated until nothing promises much hope. A very narrow stricture requiring the smallest bougies and dilating with difficulty, requires too much time to overcome and quicker means of obtaining nutriment must be employed. Gastrostomy has its drawbacks, but it is the quickest and surest way to revive these starved patients, and even in the hopeless malignant cases it will give great comfort. In its performance, I cannot see that any other operation has an advantage over the classical one of attaching the anterior wall of the stomach about its middle toward the fundus to the parietal parites and establishing a fistulous opening just to the left of the median line and about two inches below the xiphoid. The various flap and valve operations are contraindicated in these debilitated subjects. If the patient should become vigorous enough to make them effective, the same return of strength and vitality would cause a sphincter action in the split rectus. The operation may be done in one or two stages. In my case I made the approximation and pinched up the anterior gastric wall in a cerenude, which was left in place twenty-four hours. At the end of this period a fistula was established by cutting off what the cerenude held. The opening permitted the introduction of a number ten catheter, through which liquid food was given, affording the patient the greatest comfort and satisfaction.

The tube soon became loose in the fistula and leakage occurred. This was obviated by putting in on successive days permanent feeding tubes of gradually increasing size to fit snugly in the opening.

The tube was kept closed and in place by a forceps and a safety pin properly arranged. Any desired quantity or quality of food was readily introduced through it. From a study of the two cases I submit, one a high stricture in an infant, cured by lubricant food and dilation, the other a low stricture complete and amenable only to gastrostomy, I would conclude: First, all cases where stricture formation might be expected should be watched carefully and the esophagus examined and dilated in ten days or so after the injury, and if a stricture is beginning to form it should never be allowed to increase. This treatment will give the happiest results: Second, all strictures are not hopeless that seem complete, a food particle may cause a partial stricture to seem complete;

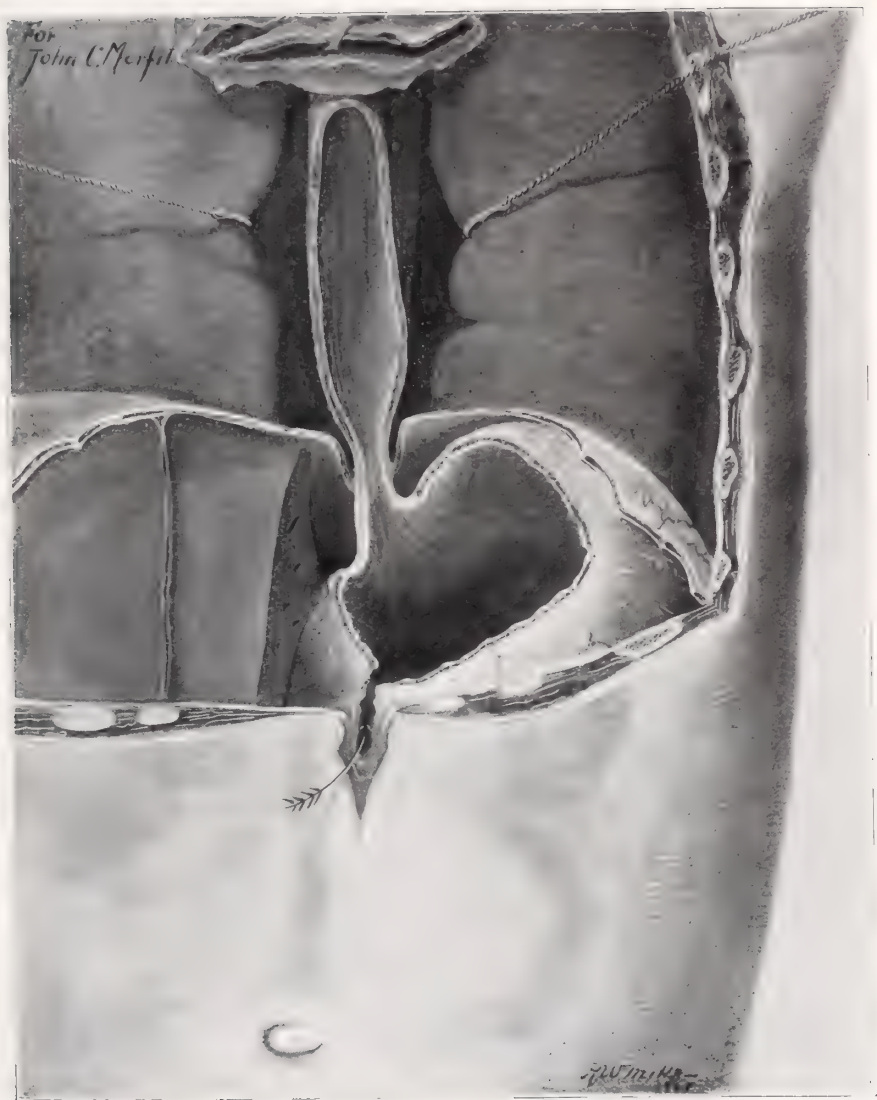
the irrigation and the early administration of nutritive lubricant oils will in many cases preserve life and prepare the way for dilation, when even a bougie cannot be passed. Third, gastrostomy for feeding and for retrograde dilation is the only alternative, and should be done as soon as the patient continues to lose flesh, even though there be a small and patent stricture present, and before the vitality is so far reduced as to leave little or no margin for recovery from a major operation.

Case 1.—B. B., age two, otherwise healthy infant, of good family and personal history, came to my clinic at the Mullanphy Hospital, August 16, 1904. Difficult deglutition followed five weeks after taking a weak solution of lye, could swallow no water or milk, very weak, ravenously hungry and greatly emaciated. Would not admit a No. 10 bougie, swallowed only olive and cod liver oils. He lived and improved on oil and oil-soaked foods, although ordinary diet would not pass the obstruction. Hominy, potatoes and rice were swallowed when oiled, but not without. Although the patient was seen seven times in the following three weeks it was twenty-four days before a No. 10 bougie passed into the stomach, although at all previous visits the attempt had been made. It was another week before a No. 9 bougie could be passed, although one intervening attempt had been made. Since then obstruction has not recurred except once temporarily as before mentioned and the child is strong and well nourished, although the bougie is passed now about twice a week to insure permanency.

Case 2.—White male, age fifty-one, shoemaker, healthy and of good habits and family history, presented himself during my service at the Mullanphy Hospital. Six weeks previously had taken some home-made corn cure consisting of snake root, laudanum and concentrated lye as a gargle by mistake. It caused a burning sensation, but little was swallowed. Took household emetics. Two weeks afterward his throat felt sore and in three weeks difficult deglutition was noticed; food, especially ice cream, could be felt lodged in the gullet, when there would occur a sudden giving away, followed by a sense of relief. His usual weight was 134 pounds but he lost fifteen pounds in three weeks; was treated with bougies in another hospital with only temporary relief. Constipated, tongue coated, sclerotic arteries. Examination showed complete stricture ten inches from the incisors. Gastrostomy was advised, but he was so pleased at the ease with which he swallowed oil and oily food that he withheld his permission to the operation. Numerous attempts at the passage of bougies were made but at no time could a passage be effected. On 13th of September he finally consented to operation, and an incision was made through the left rectus muscle, one inch from the linea alba, and extending two and a half inches from the thoracic arch vertically downward; tissues were devoid of fat and scarcely any bleeding occurred. When the peritoneum was opened air rushed in, the viscera were distant from the anterior abdominal wall, peritoneum was



Esophageal stricture at cricoid level and at point of division of trachea, with intervening sacculum. This is a post mortem specimen not suspected during life.



CASE 2.—Esophageal stricture at diaphragm level. Operative opening into stomach indicated.



dry and glistening; liver congested and enlarged, stomach very small and atrophic, the walls being little thicker than those of the intestines. The stomach was grasped with forceps about the middle of its anterior wall and drawn through the wound, gauze being packed about it. Lower one and a quarter inches of the incised mural peritoneum was closed with continuous catgut, the gauze was removed and the stomach held in place by four anchor sutures passed through the parietal and gastric coats. Then a continuous catgut suture was run through the opposing surfaces, all around, eight or nine interrupted sutures were then passed through the external rectus fascia and the stomach wall. The gastric surface thus left was pinched up with a cerenude, then the portion of the abdominal wall below the fistulous area was closed with interrupted, buried suture. The patient stood the operation well, with no shock, and was soon assuming a semirecumbent posture. On the next day the fistula was established and saline solution introduced through the catheter. On the second day the patient was obtaining nourishment through the tube. Patient progressed well and, on the fourth day was able to walk to the dressing room; the abdominal wound healed satisfactorily, although slightly retarded by the action of the escaping gastric juice. This leakage was stopped by the employment of tubes which fitted snugly in the gradually enlarging opening. The patient received as much as twelve ounces through the tube, purgatives and stimulants were given as required. Hunger and thirst were satisfied, but improvement in the general condition was not marked, and on the sixteenth day he complained of a "rotten meat taste," which may be significant, taken in connection with the post-mortem finding. At this time the patient was able to move around the room and go on the porch, and come to the dressing room for feeding. He then began to sink slowly and died on the twenty-first day. There had been no symptoms of peritonitis; the post-mortem showed parietal peritoneum very delicately adherent to the left lobe of the liver, in the vicinity of the wound. Gall bladder distended without gall stones, no fluid in the peritoneal cavity; in the right lung, internally, in immediate relation to the esophageal stricture with which there was no connection, there was a recent cavity filled with greenish fecal-smelling fluid; right lung was in a hepatized condition, some pieces sinking in water, other portions merely hypostatic. The abscess location gave a gangrenous appearance. In the esophagus, about an inch above the cardiac opening of the stomach, was a stricture not admitting the little finger, and giving the idea of complete closure by a hard, cicatricial band, just above the stricture; the mucous membrane was eroded but there was no perforation. The esophagus was removed entire with the stomach, without disturbing the connection between the latter and the abdominal wall. The operative fistula showed perfect union and there existed no evidence of peritonitis or other abdominal complications or sequelae. Cause of death was inanition and pulmonary abscess or gangrene and pneumonia. The situation of the gangrenous cavity in the lung, in immediate relation with the site of the esophageal stricture, suggests the possibility of some causal relation, but in all probability it is a coincidence.

THE SILVER FORK DEFORMITY.*

By NATHANIEL ALLISON, M. D., of St. Louis.

Every surgeon has had some experience with this deformity: a very few may have been fortunate enough to escape it as a result in their own practice, but even these few must have heard a story from a patient who placed blame at the door of some professional brother. Some of us have seen more or less of the medico-legal proceedings connected with this deformity, either as witnesses or defendants. Indeed, it may be said without exaggeration that this deformity, toward which all fractures of the forearm near the wrist tend, is an old and well recognized "bete noire" of medical practice. Colles in the year 1814 described and classified the form of fracture of the radius that bears his name; since his memorable work appeared, volumes have been written and animated discussion has taken place as to the mechanics and treatment of fracture low down on the forearm, all with the idea as to prevent this deformity. Many text-books, such as Hamilton, Stimson and Scudder, are especially full on the diagnosis and treatment of fractures that give rise to the silver fork wrist. Medical students receive practical instruction on the fine points of treatment, but despite all this we still have an annual crop of fork-shaped forearms, and it is a question whether we could improve today upon the 35 per cent. success claimed by Hamilton, the expert of the past generation. Looking at this subject in a broad way, it is quite evident that the deformity of the forearm, known as the silver fork deformity, is one exceedingly hard to prevent even in the hands of an expert. It is not the purpose of this paper, however, to go over this part of the field, but to assume that we have the deformity established and consider its correction.

Inasmuch as the etiology bears on the correction, I wish to call your attention to a few common facts, avoiding such alluring topics as the claim of Moore (1872) that there is usually a luxation of the ulna, or such an absurdity as the statement that the lower end of the ulna is always fractured with the radius. As to the exciting cause of injury, we have our own observations, agreeing with those of all observers since Sir Astley Cooper himself, that a fall on the outstretched hand, palm down, even a slight fall, is the usual cause of the fracture. This fracture, in the bulk of cases, takes place in the lower one inch of the radius. The few cases where both bones are broken or where the lower radial epiphysis is displaced are equally as important to our consideration. Any of these injuries established, we have our deformity. Simply, what happens is this: The shaft of the radius being free from its lower mooring, violent muscular spasm tends to pull it outward and forward. It is agreed that the principal agent in this is the pronator quadratus,

*Read before the St. Louis Surgical Club.

assisted to some extent by the pronator radii teres. The injury is such that the lower fragment, or fragments, are tilted in a backward direction. Thus both fragment ends are directed forward, making the prominent anterior wrist and at the same time producing the hollow of the fork on the back. This is the immediate deformity, failure to reduce which results in the fixed deformity. The failure may be placed under several heads: First—Failure to diagnose the fracture and the bad alignment of bones. Under this head we have the large number of cases treated as "sprains," "severe sprains" or dislocations of the wrist. In children, where the fracture is often subperiosteal, there is more excuse for this failure than in adults. It must be admitted, however, that swelling often obliterates the signs and makes diagnosis hard, but we must also admit that these diagnoses form a very productive field in which the permanent deformity is cultivated.

The Second Class.—Where the true condition of fracture and displacement is discovered and a reduction is not accomplished. Many of the permanent deformity class come from this source. Under this head is where the careful and even expert surgeon often meets with disappointment and blame.

Class three is that where the surgeon has made a correct diagnosis and an apparently successful reduction of deformity, has applied retention apparatus for a time, and then finds that the deformity has returned.

The consensus of opinion in the literature is that if these deformities are reduced in the first place, there is little danger of their returning, and that where there is a relapse it is more or less indicative that the reduction was not accomplished. Kenerson, in a very complete paper on fracture of the radius, makes the statement in closing, after describing the use of a skein of Germantown zephyr to effect reduction (in passing it may be well to remark that this method is a very excellent one) says: "This method will insure a perfect reduction of the deformity without unnecessary force, and will so complete a reduction that the bone will 'stay of itself' when undisturbed, will stay for all ordinary examination, such as the x-ray and manual, and still will remain while you leisurely apply a splint." I am of the opinion, however, that some cases do relapse into deformity after they have been properly reduced. I think the retention appliance must be carefully planned to offset the tendency to deformity. I am also of the belief that the class of cases which were reduced, and well reduced, at times contributed to the established deformity class.

Permanent silver fork deformity, arising from these sources, and seeking further surgical aid, what are we to do for it? Scudder, in his book on fractures, suggests osteotomy of the radius and correction, but does not go into particulars. I wish to present to you two cases in which I have done osteotomy of the radius for this deformity. First,

however, let me state what I consider to be sufficient reason for operating or withholding operation. In a person of middle life or beyond, if the deformity does not interfere with the function of the wrist to any marked degree, I should think it ill-advised. In a young adult who



CASE 1.—Before osteotomy, showing fractures and position of deformity of the forearm.

needed a strong wrist function, I think it should be considered. In a growing child, where deformity is not difficult to correct, I should advise the operation. It is, perhaps, too serious an operation to undertake for appearance sake alone.

Case 1.—L. W., æt. five years. In September of last year, while at play, a wagon gate fell on her right arm. She was immediately taken

to a doctor; her arm was "set," and an anterior splint applied. She had great pain, and her hand was extremely swollen for two days; then her mother took her to a charity clinic, where her arm was re-dressed. Two weeks later the arm was discovered to be in a position of deformity;



CASE I.—After osteotomy, showing realignment of bones and correction of forearm deformity.

an anesthetic was then given and an attempt made to correct the deformity, which was unsuccessful. Two weeks after this she came under my care. Examination showed a healthy child with a normal physical make-up, aside from her right forearm. Here there was a typical silver fork deformity and firm bony union. An x-ray picture showed fract-

ure of both the radius and ulna at the lower ends, with what seemed to be splintering of the radius. Operation was advised. One week later, through a two-inch incision over the outer border of the radius, starting half an inch above its lower end, the bone was exposed, by careful dissection avoiding the radial nerve. The periosteum was found intact; it was divided in the line of incision. A small osteotome was then forced through the bone, and a complete transverse fracture established. The union of the ulnar fragments was then broken up by inverting the hand. The wound was closed. The forearm was now firmly grasped and molded into normal shape. In fact, it was over-corrected; on this I wish to lay special stress. A light plaster bandage was then applied, which was held until it set in the over-corrected position. The back of this was then cut out so that the arm rested in a sort of perfectly applied anterior splint. The wound healed by first intention; at the end of six weeks the splint was removed. *Result.* no deformity, and the skiagram shows normal alignment of bones.

Case 2.—W. R. Boy, æt. seven years. Two weeks before patient came under my observation he fell down a flight of stairs and injured his wrist; it was swollen and painful. His mother took him to a charity clinic, where his arm was put on an anterior splint. Deformity was present when I first saw him, and of the silver fork variety. Operation and correction of the deformity was decided upon. A skiagram was taken which showed a separation of the lower radial epiphysis. I decided then that manipulation under an anesthetic would be all that this case required to restore the forearm to the normal. Accordingly, three weeks after the injury, the boy was anesthetized and the attempt made. I found it impossible to overcome the inward displacement. I then repeated the operation described in Case 1, and got an equally gratifying result. It was more difficult to do the osteotomy in this case, as the bone was harder in structure. The skiagram shows a radius returned to what is apparently a normal contour.

The McEwen osteotomy on the lower end of the femur, as well as the Gant osteotomy at its upper end, also the osteotomies on the tibia, are operations that are attended by little risk to the soft parts. Osteotomy on the radius at its lower end, on the contrary, is an operation that requires considerable care; the anatomy of this region is such that a clear understanding of what one is doing is absolutely necessary. I think it highly advisable to operate through a large opening, bearing in mind the fact that in order to avoid a thing it is best to find it. Special care should be used when it comes to dividing the bone with the chisel, there being some slight danger of dividing other important structures. In the attempt to overcome the deformity in both of my cases, I put them up in slight over-correction; that is, I sought to increase the backward curve of the radius at its lower end, as well as to slightly displace it in an outward direction.

On this very point of slight over-correction I wish to place especial emphasis. I am of the opinion that many of the corrected cases have relapsed into deformed positions because only correction, or what seemed to be correction, was obtained. Experience of many who have thought that the reduction was complete and the correction of deformity accomplished in a fresh case of fracture will, I think, bear me out in this view. We have all seen cases that we were sure would result in perfect restoration of bony alignment, that have been disappointments: perhaps only the expert eye could note the deviation from normal, but the disappointment was felt, nevertheless, in the failure to realize what we considered certain. I think it might be said that our result is always a little less perfect than we felt sure it would be at the time of correction. I wish, therefore, to call your attention to the advantages of slight over-correction. It is generally admitted that muscular pull is the important factor in the production of this deformity. Realizing this, and the fact that we place our reliance in soft pads to retain the reduced position, I think it advisable to go a little further than Kenerson advises and slightly over-correct.

The question of splints and appliances comes up. What we wish to do with a splint is to hold the forearm in such a way that the deformity cannot exist at the same time with the splint. Colles recommended a straight palmar and dorsal splint, and does not incline the hand. Seeking to improve on this method, boards have been applied to all sides of the forearm, and in consequence almost every illustrious surgeon has a namesake in some form of forearm splint. Perhaps due to Colles teaching the anterior splint has been the first thought of the general surgeon when putting up these fractures. I wish to call your attention for a moment to the dangers that lie concealed in this same anterior splint. As a rule faith is placed in the padding placed on a board which is strapped to the anterior surface of the forearm. It is absolutely necessary to hold the backward curve of the radius. Pads of cotton will pack down, swelling will become less. The agents working toward deformity, *i. e.*, the pull of the muscles, will have nothing to resist them and silver-fork position will result, and this will happen, too, where the reduction of the deformity has been perfect. In my cases I made a plaster mould of the anterior surface of the forearm while it was held in an over-corrected position; this was readily converted into a removable splint. Though this is rather an elaborate dressing, and one not well adapted to general needs, I fancy its properties for holding the corrected fracture are unsurpassed. For the treatment of fresh fracture the method of Scudder is the best. He recognized and took advantage of the fact that the posterior surface of the forearm and the back of the hand are in one plane. Applying his board splint to this plane he is able to draw backward and outward the fragments and hold them.

In closing I wish to state several opinions that I have gained through the observation of the two cases reported.

The silver-fork deformity is exceedingly hard to prevent.

When skill and watchfulness have been employed, and the deformity has followed forearm fracture, I think one of two conditions, or perhaps both of them together, are the cause. (a.) Failure to over-correct. (b.) Insufficient retention of the over-corrected position.

Osteotomy is a practical operation in certain cases to re-establish normal bone alignment.

EDITORIAL COMMENT.

THE NEW MEDICAL ST. LOUIS.

All living things grow. But not only is their rate of growth not uniform, but it often happens that internal nutritive processes essential to development continue for a long time without external manifestations. until, at last, the right moment having arrived, the organism suddenly puts forth its long pent-up powers and astonishes the beholder with a rapid and enormous increase in size and perfection of form. This is the miracle of spring, marvelous even to the old man who has witnessed it many times after the long sleep of winter. The same phenomenon occurs at times in the intellectual development of communities. A Dante is born, "the voice of a thousand years." The muse of English poetry opens her languid eyes upon an Elizabethan era. The physical sciences progress long at the pace of a horse until all at once they bound forward impelled by steam and electricity.

These thoughts were suggested by recent events in the medical history of St. Louis. For years much excellent work has been done here by individuals, by teaching institutions, by societies and within the last six years by the Medical Library. And yet much of this work was done, as it were, in the dark. Not only did men in other cities hear comparatively little of our activities, but many of our own brethren here at home knew little of what was going on around them, not because the work was not able to speak for itself, but because its voice was stifled by conflicting interests and, perhaps, prejudices. The miasm that obscured the landscape was selfishness, from which was bred isolation, division, exclusion and an unwillingness to acknowledge and therefore to share in and be benefited by the good originating outside of each one's immediate circle.

Among the apparent results of such a system, or lack of system, might be reckoned the relatively small membership and still smaller average attendance of our chief medical society. Some of our leading practitioners openly boasted that they never entered its halls. Again, the local delegations to the State and National Associations were usually far smaller than they should have been. And, again, the medical profession, professedly a scientific body, a body of students continued year after year, in spite of occasional ill-directed enterprises, without any central depository of literature, without a library.

So long indeed did this state of things continue, that when a small group of men, coming from widely-separated medical circles, but larger-minded and more optimistic than some of their fellows, announced their purpose, in the spring of 1899, to found a library for the use and profit of the entire profession, there were not wanting those who wisely shook their heads and smiled superior at such youthful enthusiasm.

"They had seen such things tried before," although they did not specify when or by whom.

Nevertheless, the enthusiasts continued their work. And to-day they witness its fruition, made all the more satisfactory by the concurrent and almost simultaneous attainment to maturity of certain other plans for the betterment of the profession. And this is no accident. It always so happens, that long, patient, continuous effort in the right direction, when it does come into its own, does so in such bountiful measure as to astonish even those to whose labor the harvest is due. Fortunate coincidences come to those who work for them.

And so it has come to pass that the physicians of this city possess a library of their own, managed by themselves for themselves, housed in its own building, of handsome exterior, well located, commodious and well appointed; that the Medical Society meets in that building, in a hall owned by doctors, where they are no longer the guests of strangers, but are as members of one family under the paternal roof. At the same time the reorganization of the National and State Associations, by which all members of the local society are members of the state body, gives a new impetus to both organizations and binds city and country in one common whole.

And thus the New Medical St. Louis is born. Mindful of all that is noble in the traditions of old St. Louis, it feels itself capable of larger and better things, and with a confidence based on arduous toil and true purpose prepares for still greater deeds in the new era.

A NEW DEPARTMENT.

It is with much gratification that the INTERSTATE MEDICAL JOURNAL finds itself able to announce to its readers the acquisition as a member of its editorial staff of Dr. Walter Baumgarten. Beginning with this number Dr. Baumgarten, who some years ago edited the department of therapeutics, will resume the conduct of this division of the JOURNAL's abstracts. As our readers will see, a new department has been added to the JOURNAL, that of Diagnosis. Hitherto this branch has been included in the department of internal medicine, but the size of the field seemed to make a division into two portions desirable. The new department will cover diagnosis in its widest sense: new tests of all sorts, new microscopic methods, contributions to physical and clinical diagnosis as well as summaries of cases reported that are of diagnostic importance. Its editor will make an effort to furnish abstracts of everything of prime importance that appears in this field, but especial attention will be paid to articles appearing in those journals that are comparatively inaccessible to most of our readers. The summary in the January number of the progress during the year in methods of diagnosis should prove of considerable value and interest.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

The Cure and Latency of Diabetes Mellitus.—LEO (*Berliner Klinische Wochenschrift*, No. 50, 1904) calls attention to the difference in opinion among recognized authorities as to the cure of diabetes. Seegen, v. Mering and Rump, for instance, maintain that diabetes is never cured. Cantani, v. Noorden, Ebstein and Ewald are among those who maintain that the cure is a possibility.

Leo believes that the difference of opinion is due to the fact that the lines are not clearly drawn between glycosuria and true diabetes, and that all are not agreed as to what the cure of diabetes constitutes. Inasmuch as the soluble carbohydrates may cause glycosuria in a non-diabetic person, they must be excluded as a factor in testing cases, and starches only should be used as the criterion. While the non-diabetic person can take unlimited amounts of starch without excreting sugar in the urine, the diabetic is characterized by the fact that his power of assimilation of starches has a limit. If this boundary is overstepped, dextrose appears in the urine.

The author maintains that we may speak of a cure of diabetes only when an individual who excreted sugar in his urine, while on a diet free from soluble carbohydrates, ceases to do so permanently in spite of a diet rich in starches.

The author reports a case in which the sugar disappeared from the urine twice for a long period of time, and the patient manifested unlimited power of assimilating starches. Each time, however, the diabetes returned. Such a case shows the importance of being always guarded with reference to a prognosis in the so-called cures of diabetes. The author is inclined to the belief that many of these cases are considered cured during a period in which they are simply latent.

A Case of Situs Inversus of the Stomach, the Duodenum and the Spleen in a Female, Sixty-three Years of Age.—HALFF (*Muenchener Medicinische Wochenschrift*, No. 51, 1904) found in the entire literature on situs inversus of the abdominal organs but three cases reported in which only the stomach, duodenum and spleen were transposed. The author's case, therefore, is the fourth on record. The patient died of carcinoma of the stomach with metastases in the liver. The autopsy revealed a complete transposition of the stomach and duodenum. The stomach extended along the right half of the posterior surface of the liver; the greater curvature on the right side, the lesser on the left. Instead of one spleen, there were two about the size of pigeons' eggs on the right side near the fundus of the stomach. The pylorus was on the left side of the median line, the curve of the duodenum was convex to the left.

The pancreas was found over the upper arm of the duodenum in the middle line, to the left of the hilus of the liver.

The author goes into the distribution of the blood vessels of these organs, their relation to the other organs, and presents interesting drawings of this unusual condition.

A Study Concerning Routes of Infection in Pulmonary Tuberculosis.—WASSERMAN (*Berliner Klinische Wochenschrift*, No. 48, 1904) presents a number of records from which he endeavors to show that the tubercle bacillus may gain entrance into the lungs through the cervical lymph nodes. He believes that from here they find their way to the parietal pleura, and then through adhesions with the visceral pleura gain entrance into the apex of the lungs. He discourages any massage of the swollen cervical lymph nodes because of the danger of disseminating the process.

Concerning Two Cases Resembling Weil's Disease, with Small Transitory Tumors in the Liver.—EINHORN (*Archiv. fuer Verdauungs-Krankheiten*, Vol. x, Pt. 5, 1904) reports two cases corresponding to the clinical picture of Weil's disease, but differing from it in that the enlargement of the liver manifested itself in small circumscribed tumefactions about the size of a walnut. In both cases the disease was ushered in with fever, severe gastric symptoms and general weakness. During the fever period, which lasted about a week, there was decided enlargement of the spleen as well as of the liver. A feature of unusual interest in these cases was that, in addition to a general enlargement of the liver, small, hard tumors could be felt on the surface of the liver, which gradually disappeared as the general symptoms subsided. Einhorn is of the belief that these tumors were the manifestation of an acute circumscribed hepatitis, with exudation, which disappeared as the inflammatory process subsided.

During the short period in which they existed they could in no way be differentiated from malignant neoplasm or gummata.

Concerning the Physical Properties of Solutions in the Human Stomach.—SOMMERFELD and ROEDER (*Berliner Klinische Wochenschrift*, No. 50, 1904) present a series of experiments concerning the physical changes which fluids of different molecular concentrations undergo in the stomach. Most of the experiments thus far made do not make allowances for the admixture of the solution with saliva.

The authors' investigations are of special interest because of the absolute exclusion of this factor. Their experiments were conducted in the case of a child with complete stricture of the esophagus, upon whom a gastrostomy had been performed.

Experiments were made with hypotonic solutions, isotonic solutions and hypertonic solutions. They found that every solution in the stomach, uninfluenced by the saliva, changes its molecular concentration. Solutions isotonic with the blood and hypertonic solutions become more dilute, while the hypotonic solutions become more concentrated. The hypertonic solutions, after remaining in the stomach for an hour, pre-

sent a higher freezing point than the blood: these solutions, therefore, leave the stomach in an hypertonic state.

They were not able to demonstrate an increase of the fluid in the stomach.

The Use of Supra-Renal Preparations in Diseases of the Esophagus.—JANOWSKI (*Archiv. fuer Verdauungs Krankheiten*, Vol. x. Pt. 5, 1904) employs supra-renal preparations in the treatment of acute toxic esophagitis with great satisfaction. He finds that in patients thus afflicted, who are unable to swallow, the application of supra-renal preparations give great and prompt relief. In fact, if five or ten drops of adrenalin solution (1 to 1000) is given frequently during the day the patient is rendered comparatively comfortable. He recommends its use also in carcinoma of the esophagus, claiming in this, as in the other conditions, a palliative effect. Its virtue in these cases depends upon its direct contractile effect upon the blood vessels, thus reducing, temporarily, at least, the inflammatory process and the pain and discomfort accompanying it.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

Peptic Ulcer of the Jejunum After Gastroenterostomy.—TIEGEL (*Mitteilungen aus der Grenzgebieten der Med. und Chirurg.*, Band 13. Heft 4 and 5).—This article details the experience with the above pathological condition which Professor Mikulicz, of Breslau, has had. Since 1899 they have operated upon five of these cases with a certain diagnosis. In addition to these five the author has collected sixteen cases from the literature, but, as the Germans are in the habit of doing, has neglected all except German literature, giving an inadequate review of the subject, such extensive work as that of Mayo Robson, which recently appeared on the subject, being completely left out of consideration. The most interesting thing about the article is that this condition was found sixteen times after anterior gastroenterostomy, once after the "Y" method and four times after the ordinary posterior operation. In one case the symptoms appeared in ten days, while in another eight years elapsed before they were noticed. The lesion looks like an ulcer of the stomach or duodenum and its symptoms are substantially the same as those just mentioned. It is a somewhat difficult matter to make an exact diagnosis, though we are most likely to have to do with a jejunal ulcer if acute perforative symptoms present themselves after gastroenterostomy, especially of the anterior variety.

A Case of Fistula of the Thyro-Glossal Duct.—V. CORNIL and ED. SCHWARTZ (*Revue de Chirurgie*, December, 1904).—The authors report an operation of their own upon one of these interesting embryologic conditions. It is interesting to note that, as in other cases, the duct is

usually not single but ramifies, there being from two to several branches of the original duct. It is always clothed with epithelium. Sometimes there is trouble with phonation and deglutition as well as considerable pain. In the authors' case the malady first attracted attention at the age of twelve years, and now, at eighteen, there was seen a small opening 3 cm. above the sternal notch leading up to the hyoid bone, past which it was impossible to follow it. Excision of the tract and suture led to a union by primary intention and the patient was relieved of all symptoms. It was one of the branching canals above referred to and its interior was clothed with ciliated columnar epithelium.

The Operative Treatment of Cancer of the Breast.—WARREN (*Annals of Surgery*, December, 1904).—One hundred cases are reported, and the results certainly justify the extensive and logical operative technique which the author proposes. In five cases the cancer had developed as a secondary process in a cyst wall or as a result of an old inflammation. In another a small fibroma of twenty years' standing had broken down into a malignant growth. Of the author's one hundred cases, twenty-six can be regarded as cured for more than three years after operation. The most favorable prognosis is to be made in colloid cancer, while adenocarcinoma is next and the scirrhus variety gives less hope, but the medullary form is worst of all. Warren has not had a single permanent recovery in which it was necessary to dissect the cervical glands, consequently he has given up this as a routine practice. The operative technique is well described and beautifully illustrated, but it must be seen in the original to be properly appreciated.

The Treatment of Large, Sharp Foreign Bodies in the Cervical Portion of the Esophagus.—DR. W. KRAMER (*Zentralbl. f. Chir.*, December, 1904).—A case is described in which a man swallowed a set of false teeth while drinking beer, and Kramer made every effort to retract or dislodge the obstruction from above, but was unsuccessful. He then attempted to do a cutting operation and found to his surprise, after he had exposed the exterior of the esophagus, that it was not at all necessary to open the viscus, since he could manipulate the obstructing mass enough so that the patient was able to expel it by coughing. The author does not know of this having been done previously, though he does not make any special claim to originality. He grants that the esophagoscope might have enabled one to remove the set of teeth without cutting. This was not used in his case. In another case the patient swallowed a bone which became lodged in the esophagus, and this, too, the author was enabled to remove in the same manner.

Double Rupture of the Biliary Passages Following a Fall.—SPILLMANN (*Arch. Provin. de Chirurgie*, December, 1904).—The patient, a child of eight years, fell fifteen metres upon the left side, breaking his arm and suffering what was vaguely classed as internal injuries. He complained of extreme pain in the region of the liver, which increased in violence during the next few days. The abdomen became distended, he had fever, and symptoms of peritonitis appeared. Twenty days after the injury he was taken to the hospital and a diagnosis of rupture of the

biliary passages was made. As he was in a grave condition the abdomen was opened at once and an immense quantity of bile gushed out. On account of the adhesions which had formed and completely shut off the neighborhood, it was impossible to tell just where the lesion existed, so the patient was put to bed and made a very satisfactory recovery until the elapse of nine days, when a recurrence of the previous symptoms set in. Thereupon a second operation was done with similar results, but the little patient died eight days later, and at autopsy there were found two ruptures, one of the hepatic duct and one of the gall bladder.

Duodenal Ulcer.—WILLIAM J. MAYO (*Annals of Surgery*, December, 1904).—With characteristic clearness and firm grasp of his subject Dr. Mayo describes his experience with fifty-eight cases. In operating for the condition, when it reaches the first portion of the duodenum, he makes the incision one inch to the right of the median line in order thereby to be able to examine the entire stomach, the biliary and pancreatic regions. A gastroenterostomy meets the condition by diverting from the diseased area the irritating gastric secretions. At present the posterior operation seems best to meet the indications, although, as Dr. Mayo expresses it, the last word has not yet been said. He makes a supplementary entero-enterostomy, and closes the afferent intestinal loop. He considers the matter of closing the pylorus to avoid secondary contraction of the gastro-enterostomy opening as being at the present day unsettled.

DIAGNOSIS.

IN CHARGE OF

A. E. TAUSSIG, M. D.

Differential Diagnosis Between Gall Stones and Cancer of the Pancreas.—E. ROCHARD (*Gazette des Hopitaux*, December 6, 1904).—Apropos of the recent unfortunate operation performed upon M. Waldeck-Rousseau, Rochard discusses the possibility of distinguishing between an icterus produced by a stone in the common duct and one due to a cancer of the head of the pancreas. Other causes of icterus, such as cirrhosis, adhesions, chronic pancreatitis and the like, can usually be readily excluded.

In calculus of the common duct, the icterus is usually sudden in its onset and often varies in intensity, whereas in pancreatic cancer it appears more gradually and, once established, does not vary. The shade of the yellow also differs in the two conditions, being a pure yellow in the former, and more like a greenish bronze (*vert bronze*) in the latter. The stool, while clay-colored in both diseases, is more apt to vary in its whiteness when the obstruction is due to a stone than when due to a cancer, for obvious reasons. The age of the patient gives us a hint, cancer being our first thought in the aged and stone in the young. An icterus of long standing is more apt to be due to stone, cancers of the pancreas being usually rapid in their growth. Nevertheless, pancreatic cancers have been recorded, in which the icterus lasted two years. A typical

history of colic is of the greatest value for diagnosis. Unfortunately, however, many cases of stone in the common duct run their course without any characteristic attacks of pain. The appearance of a cachexia or of ascites indicates a cancerous obstruction, whereas fever, due to a cystic infection, is more frequent when there is a calculus. Finally, a valuable distinction is expressed by the "Law of Courvoisier-Terrier": "In lithiasis of the common duct, which is almost always accompanied by cystic lithiasis, the gall bladder is retracted upon itself and consequently cannot be palpated. On the contrary, when the gall duct is compressed by a cancer of the head of the pancreas, the gall bladder is dilated. If, therefore, a careful abdominal palpation reveals the presence of a biliary tumor, the chances are that the icterus is due to a pancreatic cancer."

Unfortunately, none of these signs or symptoms are pathognomic, the diagnosis being possible only as the result of a careful consideration of all the data. It will often be difficult, occasionally impossible and will always require of the observer the exercise of his utmost diagnostic acumen.

Movable Kidney.—C. MANSELL MOULLEN (*Lancet*, December 10, 1904).—The condition known as movable kidney is far more common than is generally supposed. In fact, to a certain extent all kidneys may be called movable, an up-and-down movement of one or two inches being quite compatible with perfect health. A movable kidney becomes pathological only when the kidney does not spontaneously return to its original position when the diaphragm relaxes, but must be replaced either manually or by the patient assuming the recumbent posture. Such kidneys may simulate the most diverse lesions. The writer reports several cases in which movable kidneys produced symptoms closely resembling those characteristic of appendicitis, gastric ulcer, obstruction of the gall bladder and of the common duct. There is, however, one test which always enables one to ascertain whether the symptoms are produced by a movable kidney. When the patient is made to remain in the recumbent position, the symptoms are quickly relieved and usually disappear altogether if they are due to movable kidney. If due to organic disease, however, this change of position produces little or no effect.

A Hitherto Unnoticed Symptom of Graves' Disease.—S. JELLINEK (*Wiener klin. Wochenschr.*, 1904, No. 43).—The writer calls attention to a new symptom of Graves' disease, discovered by himself and H. Rosin. It consists of brown pigmentation uniformly distributed in the skin of both eyelids, but especially of the upper one. The discoloration extends upwards to the eyebrows and downwards to the infraorbital margin. The conjunctiva is not affected. It is not usually an early sign and is probably analogous to the other cutaneous pigment anomalies found in this disease and in myxedema. The blood, too, shows a characteristic change consisting in a striking disproportion between the amount of iron and of hemoglobin in the blood. Usually, whereas the number of red blood corpuscles and the percentage of hemoglobin are nearly normal, the amount of iron in the blood is considerably reduced.

Transillumination of the Stomach.—W. H. LINCOLN (*Brooklyn Med. Jour.*, 1905, No. 1).—The human stomach has been transilluminated for many years by various men since its inauguration by Einhorn. Owing to its uncertain results and to the fact that it can be used only in thin individuals, the method has, however, gradually fallen into disuse. About a year ago, Dr. Robert Coleman Kamp advocated the use of the Einhorn gastrodiaaphane in combination with a substance which might increase the illuminating power of the lamp in the stomach. Such are quinine, a decoction made from the rind of the horse-chestnut and fluorescein. The last gives the best results. It is a naphthalin product, a deep red powder and has a greenish-yellow color in weak solution. It is absolutely non-toxic. The addition of glycerine seems to increase its fluorescence. It is best used in the proportion of one-eighth to one-quarter grain to a pint of water, a stronger solution making the mixture too opaque.

The examination should be made with the stomach empty. After the lamp has been introduced, the patient is made to drink a pint of water containing one-eighth grain of fluorescein, forty grains of bicarbonate of soda (the fluorescein being insoluble in acid solutions) and one or two drachms of glycerine. This solution does not deteriorate on standing. With the abdomen bared and the patient in dark room, the current is turned on and the outline of the illuminated stomach marked on the skin.

The writer has used this method on thirty patients with satisfactory results. He presents one case of extreme gastropotosis in which the outline of the stomach was apparently revealed more accurately than would have been possible with other methods. Modifications of the procedure will readily suggest themselves. Thus it will often be preferable to introduce the fluorescein solution before the lamp. Whether the method will ever replace inflation with air as a routine procedure seems doubtful, to say the least.

The Leucocyte Count in Appendicitis.—FEDERMANN (*Munch. Med. Wochenschr.*, No. 50, 1904). BERNDT (*Ibid.* No. 50, 51).—Now that the tendency to operate in every case of appendicitis without selection is on the wane, increased interest attaches to every method at our disposal for determining the nature and the degree of the infection. For this purpose a leucocyte count is of the greatest value, although a proper interpretation of its results is not always easy. Federmann analyzes a large number of cases, as a result of which he comes to the following conclusions:

1. Every perityphlitis in which an intense infection takes place produces a high grade of leucocytosis (20,000 or over) in the first days of the disease. This finding speaks merely for a severe infection and does not indicate the presence of pus, but does point to impending perforation or gangrene. It usually increases steadily during the first three days. If the systemic intoxication produces a diminution of the organism's power of resistance, the leucocyte count falls in contrast to the increased severity of the other symptoms. The more intense the infection, the earlier or the more striking is this disproportion between the low leucocyte count and the severe clinical symptoms. A simple appendicitis with little or no

involvement of the peritoneum rarely produces a leucocytosis of over 20,000. The drop in the leucocyte count is here accompanied by an amelioration of the other clinical symptoms.

2. A leucocytosis of over 20,000 early in the disease indicates immediate operation, as does also a low leucocyte count with beginning systemic intoxication. A count of from 12,000 to 20,000 without severe clinical symptoms does not speak either for or against operation.

3. After the first forty-eight hours a low leucocyte count with grave general symptoms signifies a bad prognosis. The bulk of all patients operated upon under these conditions die.

4. The practical usefulness of the leucocyte count in appendicitis depends upon the simultaneous consideration and comparison of all the clinical symptoms as well as of the number of days the disease has existed.

The above pretty well represents the present status of the leucocyte count in the disease, and this excellent article can be commended to the perusal of our readers. Berñdt, on the whole, agrees with these conclusions. He is inclined, however, to lay particular stress upon the pulse-rate. Where the pulse beats 100 to the minute at the onset of the disease, a severe infection is to be expected. If during the next 6-12 hours it remains at this height or rises, immediate operation is imperative. Even if the case is not seen until later in the disease, a pulse-rate of 100 or over should indicate operation.

We doubt whether this opinion will find many adherents. The pulse-rate is too individual a matter to justify such absolute conclusions. A pulse of 100 has very different significance in individuals whose normal rate is fifty and in those whose normal rate is ninety.

THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

The Technique of Tape-worm Therapy.—BOAS (*Therap. Monatsh.*, December, 1904, p. 621) corroborates Sobotta's experience that *felix mas* is by far the most reliable therapeutic agent in removing taenia, provided it is given in sufficient doses and in an efficient manner. The method which he has employed for some years is based upon the assumption that the effect of the drug upon the parasite becomes greater the longer it remains in contact with it and the less it is diluted. For this reason he urges that purgatives should be deferred for at least six hours after the administration of the remedy, and considers that purgatives given at the time or within two hours after the remedy simply shorten the exposure of the taenia to its toxic action, and is "more pleasant to the parasite than to the patient." With Granitz, he warns against castor oil as a purgative for this purpose, because of the frequent toxic effects on the patient which follow its administration. He also objects to calomel on account of its uncertain action, but advises the use

of Epsom salts or an aperient water containing Epsom salts as its active constituent. Likewise, he deems a preparatory starvation and clearing up of the intestinal tract as unnecessary, unless, in regard to the latter point, actual constipation exists. In regard to the administration of the drug when it is not well borne by the stomach, he employs an emulsion of the extract in a solution of gum arabic; if, in spite of this precaution, nausea is still produced, he guards it with a hypodermic of morphine. The efficient dose for adults need not exceed five to eight grams.

The *modus operandi* is the following: The patient is allowed his usual diet on the day preceding the cure; if constipated, he is given a saline purgative, otherwise not. On the following morning he is given from five to eight g. of extract *felicis mas* on an empty stomach, after which he takes neither solid food nor liquids for six or seven hours, at the end of which time he is given a full dose of a saline purgative, preferably Epsom salts. No food is allowed until after the expulsion of the parasite. The patient is then at liberty to eat according to his inclination.

Urotropin as a Prophylactic Against Scarlatinal Nephritis.—Patchkowski (*Therap. Monatsh.*, December, 1904, p. 620), following the suggestion of Widowitz, employed urotropin as a routine measure in fifty-two cases of scarlet fever admitted to the Charlottenburg Municipal Hospital, with a consequent incidence of nephritis in 3.8 per cent. of the cases, as compared to 20.9 per cent. in the previous (not so treated) 225 cases in the same institution, and to 10 per cent. and 19.6 per cent. in two series of cases (358 and 393, respectively,) cited by Heubner. As an evidence of the severity of the cases in other ways, he notes that in eighteen cases exhaustive glandular suppuration occurred, and in twenty-two cases otitis media, all of which required operation. The dose ranged from 0.25 g. for children to 0.5 g. for adults, given three times a day. One group of cases (eight) received the drug daily for periods varying from ten to twenty-one days. In a second group of forty-four cases the drug was given for periods of four days with intermissions of equal length. Nephritis developed in two cases of the latter group; none in the former.

Advances in the Treatment of Diabetes Mellitus.—J. STRAUSS (*Deutsch. med. Wochenschr.*, 1904, No. 45, p. 1639) cites and reviews the recent changes in opinion in regard to the treatment of diabetes mellitus, based on studies in the metabolism of diabetics, and the methods which have been developed therefrom, dietetic, physical and medicinal, and also the attempts at organo- or ferment-therapy. We shall attempt to abstract in this issue only the dietetic methods of treatment, and discuss separately the carbohydrates, fats and proteids.

Based partly on empirical facts, partly on theoretical considerations, the opinion has gained ground that more carbohydrate food may be administered to diabetics than was formerly allowed, with the effect particularly of postponing or preventing the appearance of acidosis and the possible subsequent coma. On such a supposition a number of methods have been proposed. Winternitz and Strasser found that the enforcement of a strict milk diet would cause the disappearance of glycosuria in forty-eight hours, some cases having been completely cured, in the

sense that they became able to return to an ordinary mixed diet. This observation has been accepted, with substantial reservations, by Naunyn and others. They grant that many, even some severe, cases of diabetes bear small quantities (one-half litre) of milk well, but that, in general, diabetics react very variously to milk, or its essential constituent in this regard, milk sugar. This, as such, is well borne, but that part of it which is split up in the intestine is rapidly excreted in the urine. The quantity of milk sugar so split up depends upon the variable presence and activity of the milk-sugar-splitting ferment, which H. Strauss has demonstrated to be present in adults as well as in infants. v. Noorden holds that it is a mistake to attempt an exclusive milk diet in any case; that no definite rule can be laid down for its administration, but that the tolerance for milk must be determined for each individual case. He advises that milk be given liberally in mild cases in which it causes no increase in the glycosuria. Potatoes have been demonstrated by Mosse to cause a much less marked glycosuria than a quantity of bread containing an equivalent amount of carbohydrate. When an equivalent quantity of potatoes is substituted for bread in the dietary, the diminution in the glycosuria is marked, and is accompanied by diminished quantity of urine and a lessened thirst. Mosse has shown by examination of the urine and faeces that this diminished excretion of sugar is not due to poor absorption of the potato starch, and suggests that it may be due to the effect of the greater water content of potatoes and to the quantity of potassium salts which they contain. v. Noorden has shown that oatmeal, too, is better borne by diabetics than bread. He further observed the apparent paradox in a number of cases that as the quantity of oatmeal was increased the glycosuria not only failed to increase, but that it decreased, and that this decrease was accompanied by a diminution in the acetone and the ammonia contained in the urine. The cause for this increase in tolerance for starches v. Noorden is inclined to ascribe, as Mosse did for potatoes, to the presence of other substances in oatmeal, possibly the salts, which counteract the effect of the carbohydrate in the glycosuria. Oatmeal is best tolerated when it is given as the only form of carbohydrate, but unfortunately its prolonged use is made impossible by the aversion to it on the part of the patient which develops in eight to fourteen days. The technique of this method v. Noorden describes in the following way: Oatmeal is boiled for a very long time in water to which a little salt is added. To this is added butter and, after cooling, egg albumin. In a strict oatmeal diet the total quantity of gruel for the day prepared in this manner should contain 250 g. of oatmeal, 100 g. albumin and 300 g. butter. This may be given in small quantities every two hours, with, in addition, a little whisky or wine and some strong black coffee. The cases of diabetes which are most favorably influenced by the oatmeal diet, and the chief indication for its employment, are the severer forms with evident acidosis. The milder forms of the disease, without diacetic acid, or acetone, in the urine, are usually unfavorably affected, so that any tolerance which they may have for carbohydrates becomes impaired. In any case, the effect of this diet should be controlled by daily determinations of sugar and acetone. v. Noorden employs the method particularly in cases of severe glycosuria with pronounced acetonuria, in which the

ordinary strict diet fails to affect or intensifies the condition, and in which there is danger of impending coma. Carbohydrates aid in removing this danger, while their exclusion from the diet is undoubtedly an important cause of acidosis. v. Noorden considers oatmeal superior to other forms of carbohydrate food in this important group of cures, and L. Mohr considers v. Noorden's procedure the best means of combating high degrees of acidosis.

The knowledge that acetone appeared in the urine as an accompaniment of fat katabolism, and that it arose during this process, has not been followed by changes in the diabetic diet which one might logically expect. v. Noorden notes that the acetonuria following daily large quantities (150-200 g.) of fat tends in a week or two to approach the degree which existed before the larger quantity of fat was allowed, and Loehning doubts whether an acidosis, provoked in this way, is to be regarded with the same alarm as an acidosis occurring when fat forms no part of the diet. Huebner considers it expedient to allow as much fat as may be required to supply the necessary carbon to the organism. Though butter contains more volatile fatty acids, from which the acetone is mainly derived, than other forms of fat, v. Noorden prefers it because it is more palatable, and suggests that it may be rid of the greater part of its volatile fatty acids by thorough washing.

That the glycosuria in diabetes may be increased by proteids has been recognized by all investigators, and for this reason it has been insisted that the quantity of proteids as well as of carbohydrates should be definitely laid down for each individual case. Cantani and Naunyn consider 500 g. per day of cooked meat as sufficient for any diabetic, and think that nothing is to be more avoided than an overloading of the general metabolism with proteid. According to v. Noorden 120 to 140 g. of proteid per day may be given in the mild forms of diabetes, but in the severer forms in which exclusion of carbohydrates fails to free the urine of sugar, this quantity should be reduced to 70 to 90 g. per day. Kolisch contends that the proteid diet should be reduced to the lowest quantity at which the individual will remain in nitrogen-equilibrium. He also notes that the diabetic organism has so adjusted itself that it requires a smaller number of calories per kilo of weight than the normal individual, and Naunyn also points out that diabetics live for years, and even put on weight on a diet of far less caloric value than is required in health. v. Noorden, as well as Kolisch, emphasizes that some mild cases of diabetes may be made sugar-free by reducing the quantity of proteid without restriction of the carbohydrates, and Lenne insists that in the mild as well as the severe forms, the proteids be reduced to the lowest possible minimum. The form of proteid which is least unfavorable depends largely, according to v. Noorden, on the idiosyncrasy of the individual, and must be determined for each case. He states, however, that restriction to one form of proteid, as far as it can be carried out, reduces the glycosuria more promptly than when proteid is given in various forms. He considers the vegetable proteids and eggs as in general the least deleterious.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

The Anti-Bodies of Streptococcus and Pneumococcus Sera.—F. NEUFELD and W. RIMPAN (*Deutsche Med. Woch.*, 1904, No. 40).—Neufeld and Rimpan demonstrate in this article that there can be present in immune sera three substances, different in character and action. To the antitoxin and bactericidal action, they add a third function of specific character. It consists in a phagocytosis occurring by the interaction of immune serum and of leucocytes under certain conditions, that experimentally can be studied. Neufeld immunized rabbits against a virulent streptococcus, and found that in the immune serum thus produced streptococci were taken up by the leucocytes derived from normal rabbits. Similar experiments have been made before by Denys and Leclef, and Metschnikoff had explained the action of such a serum as a stimulation of the leucocytes. The authors object to this explanation, and find that the bacteria are made less resistant by taking up from the immune serum a substance relatively thermostabile, and called by Pfeiffer immune substance. Only after this union, the bacteria become accessible to the phagocytic function of the leucocytes. The same results were obtained for pneumococci; the conditions were the same in the animal body and in the test tube.

Studies in Phagocytosis.—L. HECTOEN and G. F. RUEDIGER (*Jour. of Infect. Diseases*, Vol. II, No. 1).—The question of phagocytosis to which the preceding review referred has been greatly stimulated by Wright and Douglas by their experiments, published in 1903 and 1904, on the effect of normal serum and plasma on this process. Hectoen and Ruediger have extended the line of these investigations and have come to very important results that certainly demonstrate the existence of such substances, called by Wright opsonins, and introduce us into some of their biologic qualities. Following Wright's method of controlling the degree of phagocytosis they come to the following conclusion:

1. Phagocytosis of many bacteria by leucocytes of various normal animals, including man, is dependent upon the presence in the plasma of special substances designated by Wright and Douglas as opsonins.
2. The opsonins become attached to the bacteria, which will for unknown reasons become susceptible to phagocytosis.
3. The opsonins in the blood of one species may sensitize for phagocytosis by the leucocytes of a different species.
4. Opsonins are thermostabile substances of a constitution analogous to that of the toxins and complements in that they seem to have two groups, haptophorous and opsoniphorous; by heating sensitized bacteria, the latter group appears to be destroyed, but the inactive opsonins by saturating the bacteria prevent further sensitization by fresh serum.
5. Like complements, opsonins may be neutralized or bound by various salt solutions and other substances, so that they cannot act upon bacteria. Antiphagocytic action of this nature may be an important factor in

the establishment and progress of various infections, especially those caused by streptococci, pneumococci and other microbes, in the destruction of which phagocytosis is an important factor.

Antibacteriolytic (Antagonistic) Substances of Normal Sera.—A. PFEIFFER and E. FRIEDBERGER (*Deutsche. Med. Woch.*, 1905, No. 1).—Pfeiffer had been able by the injection of immune serum to produce antiamboceptors for the cholera amboceptors. Certain clinical observations during infectious processes, suggested the thought of the presence of such antiamboceptors, of course of heterogeneous type, since with the normal presence of amboceptors (in Pfeiffer's case for cholera bacilli), antiamboceptors were excluded. In the course of very careful and exact experiments, that Pfeiffer and Friedberger instituted in this direction, they succeeded in positively demonstrating in normal sera substances that were antibacteriolytic, that is, prevented the bacteriolysis by an immune serum. The more exact analysis, however, showed that there were no antiamboceptors, and could not be anticomplements either. Their specificity obtains only for the species of bacteria used, not for the species of animal from which the serum is taken. They act even on the anti-immune body of an animal that is immunized after the serum was taken. For them the law of multiplicity does not obtain, and their union with the amboceptor is not firm, as secondarily added amboceptors will dissociate this union. The authors conclude that these substances form a new so far unknown category of serum constituents, and call them bacteriolytic antagonists. They do not enter into the possible function they may have to fulfill, but it is reasonable from Pfeiffer's previous work to believe that the assumption is this: The antagonists prevent invading bacteria from being disintegrated and distribute their endotoxin into the fluids of the body. Instead, their amboceptors being occluded they become, like saprophytes, the prey of phagocytes, and are made innocuous by digestion within the protoplasm of these cells. Whether they are identical with Wright's opsonins is not clear. Hecton's researches, if correct, would exclude this idea.

A New Method of Obtaining Anti-Bodies.—F. LOEFFLER (*Deutsche. Med. Woch.*, 1904, No. 52).—As is well known, McFadyen utilized freezing of bacteria and triturating them in their fragile frozen condition to a fine powder, for the purpose of extracting from these comminuted cells the body toxins. Loeffler asked himself if drying of bacteria and heating them to a degree that they were killed would retain their power of setting up reactions in animals infected with them. His first experiments were made with egg albumin, serums, etc., that were dried and heated to 150 degrees C. The investigation with this material showed the production of specific precipitins and agglutinins. Bacteria then were treated in the same way, finely pulverized, and their suspension used for the inoculations. It was found that the specific toxicity of these substances was not destroyed (snake venom behaved the same), and the agglutinative and bacteriolytic quality of the sera thus obtained was very high. Aside from the theoretic interest of these findings, that have been known to obtain for ferments for a long time, the importance lies in the absence of danger and in the easiness in which, in the future, immunization

can be carried on. There has been a difference of opinion about the immunizing qualities of living or killed bacteria. Pfeiffer maintaining that only living, virulent bacteria could be considered in this respect for immunizing purposes. Wassermann, however, has already shown for agglutinins, at least, that the same degree of immunity can be produced by using killed bacteria of low virulence. Further investigation must be made to show which view is theoretically correct. For practical purposes, where it is not necessary to bring about a high degree of bactericidal or other immunity, Loeffler's method seems to be the solution of many difficulties that have opposed a more extensive use of prophylactic immunization.

Advantages and Disadvantages of Ficker's Typhoid Diagnostic.—W. J. GUETTLER (*Berl. Klin. Woch.*, Nos. 51 and 52).—This paper cannot be reviewed with a few remarks, and it is mentioned only to call attention to a source in which a very accurate and impartial elucidation of the methods can be found to make the Widal test really a diagnostic. It would lead too far to enter into the objections that must be made against the methods used generally, and it may be sufficient to say that theoretically of a hundred tests made the result can only be considered in a small minority as having any meaning. Only in a very few cases the examiner makes a diagnosis; the seeming correctness of his positive reports, as compared with the clinical symptoms, does not prove that the latter are justly interpreted. The dilution of the blood or serum that ordinarily is employed, does not allow the assumption of a typhoid infection in a single case. Ficker's reagent is more scientific than the ordinary methods, but in many ways it, too, lacks the definiteness of the experiment that bacteriology teaches is the expression of the recognized workings of the reaction. The Pseudo-Widal reaction has done much good by directing attention to the great frequency of cases of typhoid otherwise unrecognized. It has led to their recognition, but has not diagnosed them, and in many cases it has led, and still leads, to faulty conclusions. Statistics built on it are of no definite value, no more than are clinical statistics. The difficulties and the precautions with which the agglutination test must be surrounded in order to give a decisive answer may be well learned from this paper.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

A Pregnancy Reaction of Fetal Organs and Their Puerperal Involution.—J. HALBAN (*Zeitsch. f. Geb. u. Gyn.*, vol. lxxx., H. 2).—This paper forms a most noteworthy contribution to medical literature. It brings up for consideration an absolutely new problem which demands the full interest of both the embryologist and obstetrician. The author bases his deductions upon very painstaking investigations and upon a most ingenious

interpretation of older observations. For obvious reasons it is impossible to describe them here in full and give an exact outline of the logical way in which the author reaches his conclusions.

Pregnancy effects certain characteristic changes in various organs of the pregnant woman. The most striking are the hypertrophy of the uterus, the formation of decidua, the changes in the breasts and alterations in the constitution of the blood. Almost identical changes can be found in the same organs of the new born infant. These abnormal conditions gradually disappear with the beginning of the extrauterine life. The infant's uterus soon becomes smaller; the same is true for the breasts, his blood more and more resembles histologically and chemically the blood of the full grown. In Halban's opinion the changes in the maternal system are due to the products of an internal secretion, originating from the chorion epithelium. These same substances affect in a similar way the fetus *in utero*. They are of a toxic nature, cause, under normal conditions, the typical molimina of pregnancy, and if aggregating to a pathological degree produce the intoxications of pregnancy, *e. g.*, eclampsia.

The Etiology, Prophylaxis and Treatment of Uterine Rupture During Labor.—N. IVANNOFF (*Annales de Gyn. et d'Obst.*, August, September, October, 1904).—In this lengthy but very carefully prepared paper the writer considers uterine rupture in all its various aspects. His conclusions are based upon 124 cases that were observed in the Moscow Maternity in 118,581 confinements. Concerning their etiology the author classifies his cases in six groups. Those complicating: (1) Placenta previa, (2) transverse position, (3) hydrocephalus, (4) contracted and deformed pelvis, (5) vertex presentations that necessitate operative interference, and (6) pathological conditions of the uterine wall. Interesting is the author's statement that the majority of ruptures which occur in cases of placenta previa and transverse position are directly due to violence at the time of operative interference, while in cases of hydrocephalus and in contracted pelvis the greater number of the ruptures appear spontaneously. Modifications in the elastic tissue of the uterine wall play no role in the etiology of rupture. The last of his fifteen theses reads as follows: The therapy of every uterine rupture during labor should be operative; this alone offers the possibility of arresting hemorrhage and cleansing both wound and peritoneal cavity.

Injuries of the Uterine Wall and Rupture During Childbirth.—K. BAISCH (*Zentralbl. f. Gyn.*, No. 50, 1904).—In a patient, thirty-two years of age, after delivery of the eighth child, the uterine wall was perforated with the finger when a placental polyp was removed. Recovery with slight elevation of temperature within eleven days. Two years later a pregnancy was prematurely interrupted on account of a placenta previa. An atonic hemorrhage followed which necessitated the extirpation of the uterus. On the place of the old perforation a thin scar without a trace of muscular elements was found. Such findings throw much light upon the etiology of unexpected rupture of the uterine wall either during pregnancy or confinement.

The Loss of Blood During Menstruation.—HOPPE-SEILER (*Zeitsch. f. phys. Chemie*, Bd. xlii, H. 5. and 6; rev. *Zentralbl. f. Gyn.*, No. 1, 1905).—The writer ascertained in a very exact way the real loss of blood during menstruation. The menstruating woman was kept in bed. The blood was carefully collected on vulvar pads, which then were thoroughly rinsed in water. By determining the percentage of hemoglobin in this fluid and comparing it with the amount of hemoglobin in the patient's blood, the total loss of blood could be calculated with considerable accuracy. The figures found in this manner are very interesting. In marked contradistinction to prevalent views it was ascertained that a woman during normal menstruation loses on an average but 37 cc., a little more than one ounce; in cases of menorrhagia, *e. g.*, on account of a metritis, the amount rose to 376 cc. within three days. Fever seems to reduce the menstrual flow. A girl with an average of 41.5 cc. pro menstruation lost during an attack of fever only 14.8 cc. Text-books as a rule place the amount lost during a normal menstruation as between 90 and 240 cc.

Three Cases of Cancer Complicating Advanced Pregnancy.—HERBERT R. SPENCER (*Jour. of Obst. Brit. Emp.*, December, 1904).—The writer gives the histories of the following three cases which are of unusual interest.

Case 1.—Patient was delivered March 25, 1893, with forceps, of a fully developed child. Just two weeks later a malignant growth was detected on the anterior lip of the cervix, which, by microscopical examination was found to be a squamous epithelioma. April 8, 1893, the cervix was removed by high amputation. Uninterrupted recovery. Latter part of 1894 she again became pregnant, therefore Porro's operation was performed at the end of pregnancy. Both mother and child recovered. In July, 1904, the patient is still well and free of recurrence, eleven and a quarter years after high amputation of the cancerous cervix.

Case 2.—On January 9, 1896, premature labor was produced in seventh month of pregnancy. On January 28th the carcinomatous cervix was removed by high amputation (squamous epithelioma). Uninterrupted recovery. On August 9, 1904, eight and one half years after the operation, the patient was found well without recurrence.

Case 3.—On June 30, 1896, four months after a normal confinement, the cervix was removed by high amputation for a squamous epithelioma. Prompt recovery. August 6, 1904, more than eight years after the operation, the patient is perfectly well.

In concluding his very instructive paper, the writer ascribes the remarkable success in his three cases to the use of the thermocautery and to the fact that the operations were performed during the puerperal state when the tissues were undergoing involution. In the author's opinion the total extirpation of the uterus should be limited to cases of sepsis or when the peritoneum was extensively opened during high amputation or uncontrollable hemorrhage is met with. If possible the operation should be postponed until two weeks after the expulsion of the fetus.

PEDIATRICS.

IN CHARGE OF

. ALFRED FRIEDLANDER, M. D.

Recurrent Vomiting.—RACHFORD (*Arch. of Ped.*, December, 1904.) defines this as a symptom group closely allied to migraine, autotoxic in origin, and characterized by recurrent attacks of nausea, persistent vomiting and great prostration. The great majority of these cases occur in infancy and early childhood, the condition being most common between the third and tenth years. The tendency is to spontaneous recovery, but the attacks may continue into adult life, being transformed into migraine. Heredity is the most important predisposing factor. A family history of migraine or gout is present in nearly every case, and a general neurotic inheritance is common. Constipation is certainly an important predisposing factor, and the resulting intestinal toxemia doubtless contributes largely to the general irritability of the nervous system. Mental overwork and nerve excitement combined with indoor life are certainly predisposing causes, and so most of the cases occur in the rich and refined.

It is generally agreed that recurrent vomiting is an autointoxication, the author holding that both auto- and intestinal toxins may be factors. The acid intoxications which occur during the attack are to be considered as effects rather than as causes. Functional incompetency of the liver is of great importance in the production of the condition. The liver is unable to fulfill perfectly its function of converting ammonia and the purin bodies into urea. It is more than probable that the toxins in these cases are either identical with or closely related to the purin bodies.

Of direct, exciting causes of attacks, mental fatigue and excitement, nervous strain, fright and anger are common. Overeating is another common cause, overindulgence in highly acid foods being among the potent factors. Reflex irritations of various kinds may also act as exciting causes, but it is to be remembered that there must always be an underlying basis of autointoxication.

Symptoms.—Prodromal symptoms, such as general restlessness, nervous irritability, sleeplessness, malaise and a peculiar, sweetish odor of the breath are often noted. Vomiting is the most characteristic symptom of the attack itself. At first, food only is rejected, but after twenty-four hours the vomiting becomes very severe; is accompanied by constant nausea. Bile and blood-tinged mucus are expelled. This vomiting may continue from one to six days, the attack ceasing as suddenly as it came on. Convalescence is ordinarily rapidly established, and no further symptoms are noted until the next attack. The interval between attacks is from two to six months. The constipation which precedes the attack usually becomes exceedingly obstinate during the attack, and when it is relieved the stools are putrid. During the attack there is never any desire for food, but thirst is always extreme. Rapid emaciation is the rule, and prostration is usually marked. There is al-

ways more or less fever. The tongue is usually dry, and the peculiar acetone odor of the breath marked. Toward the end of the attack somnolence is usually present, as in the case of the close of the migrainous attack.

The urine is concentrated, strongly acid, showing excess of the xanthin bodies, and acetone and indican in all of the severe cases.

Treatment.—If seen in the prodromal stage, one-quarter grain of calomel and five grains of bicarbonate of soda should be given every half hour until two grains of calomel are given. This should be followed by a saline laxative, and later by benzoate of soda in three to eight-grain doses every three or four hours. No food whatever should be given, though water is allowable if it can be retained. In the attack proper a high rectal enema of bicarbonate of soda solution, a tablespoonful to the pint, should be given every eight hours. In the worst cases normal salt solution may be given hypodermically, and very small doses of morphia, also hypodermically.

The curative treatment embraces outdoor life with moderate exercise. Often a change of climate, the warmer southern climates being preferred, acts very well. The diet must be carefully restricted; raw fruits, acid vegetables, stimulants and sweets are interdicted. Milk, cocoa, vegetable soups, cereals, cooked fruits, eggs, fish, chicken, mutton and occasionally beef are allowable. The constipation is to be relieved at first by palatable saline mixtures, later by mixtures of rhubarb and cascara. So far as drugs are concerned, the salicylate and benzoate of soda, in appropriate doses, and put up with essence of pepsin, are of great value, and should be given for long periods of time.

On Sudden and Unexpected Death in Children.—This subject was up for discussion at a recent meeting of the British Society for the study of diseases in children. An abstract of this discussion forms the subject of an editorial in the *British Jour. of Chil. Diseases*, January, 1905. Two important facts were brought out prominently at this meeting. First, that sudden death may occur in every known disease of importance and, second, that sudden and unexpected death in childhood is relatively frequent. Deaths from asphyxia, from the overwhelming of the respiratory centers by toxins of various kinds, would appear to occur rather frequently. The toxins of the acute infectious diseases would appear to be very active in this class of cases, sudden death after diphtheria being illustrative of the case in point. It is noteworthy that sudden death from the toxin of typhoid, not suspected during life, is not rare. According to MacAlister, sudden death from heart disease is relatively infrequent. Instances of sudden death from uncomplicated rheumatic myocarditis were recorded.

Parkinson, in discussing sudden death from functional causes, alluded to fright as a possible cause. He was inclined to believe that death in the early stages of chloroform narcosis might at times be ascribed to this cause.

Walker discussed the question of enlarged thymus and status lymphaticus. He believed the lymphatic hyperplasia in these cases was a reaction to chronic toxemia.

Tubby opened the discussion on sudden death from surgical causes. He dealt with the subject under the headings of the following causes: circulatory, shock, toxemic, infectious, mechanical, nervous and rare and unusual causes not comprised under any of the above sections.

Cases of sudden death in rickety children immediately following exploratory chest puncture (*i. g.*, for suspected empyema) were also reported. Such fatalities have been explained on the basis of reflex inhibition of the cardiac and respiratory centers, due to irritation of small branches of the vagus by the exploring needle.

Various other causes of sudden deaths were reported, and the discussion certainly drew attention to the fact that a variety of unknown toxic conditions may be responsible for sudden and unexpected death in childhood.

Concerning Buttermilk in Infant Feeding.—At a recent meeting of the Lower Rhenish Pediatric Society Cantrowitz (*Centralblatt f. Kinderheilk.*, January, 1905) took up the question of the relation of buttermilk feeding to rickets, concerning which reports have appeared of late. From 100 babies fed on buttermilk, he selected those in which this food had been used at least two months, also finding several who had taken buttermilk at least a year. In thirty-seven cases, he found evidences of rickets ten times, but, as he was able to show, distinct etiological factors of rickets existed in all of these. Until better proof of the connection of buttermilk feeding and rickets can be shown, he holds that it would be a mistake to abstain from buttermilk in suitable cases, in view of the excellent results that have been reported from its use by so many observers.

As ordinarily given, wheat flour is added to the buttermilk [in the proportion of a tablespoonful to the litre. A small quantity of cane sugar is added and the whole mixture boiled.—Ed.]

According to Cantrowitz this addition of flour is not absolutely necessary. In fact, if a diminished power of starch conversion have previously existed, such addition may give rise to intestinal disturbances. In order to prevent the lumping of the buttermilk, which is apt to occur if it be heated without the addition of flour, the heating must be done very gradually, over a slow fire and under constant stirring. The flour free buttermilk has been found to be just as digestible as the mixture with the flour added. Depending upon the nature of the pre-existing intestinal disturbance (insufficiency of fat or starch digestion), the buttermilk may be advantageously modified by the addition of cream or wheat flour.

Disturbances of Digestion in Infants Resulting From the Use of Too High Fat Percentages.—HOLT (*Archives of Pediatrics*, January, 1905) thinks that disturbances of digestion resulting from an excess of fat are quite as serious, if not quite as obvious, as those which follow the use of too high proteids. The high fat percentages in the food may arise from the use of an over rich milk, or from the intentional increase of the fat in order to overcome constipation. From the study of a series of cases, Holt concludes that gastric complications, such as habitual vomiting, continued fermentation, with the production of gastric catarrh, are not

the only sequelæ of high fat percentages. Disturbances of intestinal digestion may also occur, and it is noteworthy that chronic constipation may also be greatly aggravated by such feeding. The hard, dry, gray stools passed under these conditions may consist almost entirely of undigested fat. In some of the cases severe nervous symptoms also occurred. There is, however, no arbitrary standard as to the amount of fat which may be given to healthy infants, inasmuch as children differ in their capacity to digest fats as in other respects. Personally, the author has never seen any benefit, but often very much harm, from raising the fat above four per cent., and in his practice he has fixed upon this as about the limit for the average child. When there are symptoms of either gastric or intestinal indigestion, the fats should be reduced much below this figure.

Study of Three Hundred and Forty-Six Cases of Typhoid in Childhood.—THIEBAUX (*These de Nancy, Arch. de Med. des Enf.*, December, 1904) finds that in the last few years the cases of typhoid in childhood (in his hospital) have been diminishing in severity. All the symptoms as found in adults are met with, but the picture is not at all uniform. Even the most characteristic symptoms, such as the roseola, the stupor, the diarrhœa, are not constant. The temperature is more irregular than in adult life, the pulse more rapid. Pulmonary involvement is relatively rare. Convalescence presents two interesting phenomena—desquamation and extreme emaciation. About half the cases were mild. Relapses were frequent, usually not severe, and often due to infraction of dietetic or hygienic regimen. Complications were, relatively speaking, not frequent. The mortality was about that of other hospitals. (Actual figures not given.—Ed.). The diagnosis is often very difficult, on account of the great number of atypical forms.

ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

Dislocation of the Patella, with Rotation on Its Horizontal Axis.—WILLIAM S. CHEESMAN, Auburn, N. Y. (*Annals of Surg.*, January, 1905).—Dislocations of the patella with rotation on its perpendicular axis are not specially rare. Here the bone is revolved through 90 degrees, and rests on edge in the groove between the femoral condyles, or it may be completely turned over and have its articular facets looking directly forward. Dislocation with rotation on the horizontal axis is very rare. The author could find but five reported cases. He reports a case himself, that of a boy who fell from a moving train. Examination showed the lower edge of the patella pointing directly forward and the upper edge firmly wedged in the notch between the tibia and femur. Three attempts were made to reduce the dislocation, but open operation had to be resorted to. The quadriceps tendon was torn entirely from

the bone, and the upper border was so firmly jammed into the space between the femur and tibia that it was necessary to pry it out with a blunt dissector, introduced through a slit in the tense ligamentum patellæ to the under side of the bone. The five reported cases are reviewed and the author notes the fact that in only one of them was it possible to affect reduction by manipulation.

Notes on Achondroplasia (Chondrodystrophia Fœtalis), with Particulars and Skiagrams of a Case.—HAROLD BALME, M. R. C. S., L. R. C. P., and A. D. REID, M. R. C. S., L. R. C. P. (*London Practitioner*, December, 1904).—Before Parrot wrote his description of this disorder and gave to it the name of Achondroplasia (1878), many cases had been observed and well described under the impression that they were cases of *congenital rickets*, the so-called foetal rickets. Since his monograph was written much has been done on the pathology of this condition, and cases are now recognized and differentiated from rickets and cretinism. The *Encyclopedia Medica* defines achondroplasia as a foetal disease, which causes a defective growth of certain of the bones in utero, and leads to congenital dwarfing of the extremities, and other deformities, which exist through life. Nothing is known of its ætiology; syphilis and prenatal influences are unsubstantiated suggestions. Clinically the features of the disease are seen immediately when the child is born; this makes it unlike rickets, and these features are a large square head and a long body with short limbs. The long bones are stunted and the hands present the "main en trident" of Marie, that is, they are short and fat and the fingers radiate like the spokes of a wheel. Should the patient survive birth and attain adult life, he is usually strong and healthy and his mental powers are unimpaired—unlike cretinism. Other congenital deformities are often associated, such as high-arched palate, congenital hernia or congenital dislocation of the hip. On the pathological anatomy, Parrot, Barlow and Kaufman have given most of the data, and are responsible for most of the theories. The deformed head is due in the great majority of cases to premature synostosis, thus it is found that the inter-parietal portion of the occipital bone (which develops in membrane) is large and expanded, while the supra-occipital portion (which develops in cartilage) is much stunted. As to the long bones, they are hard and compact, free from rarefaction or other osseous change: the diaphysis is expanded at its extremity, the line of ossification is perfectly clear and well marked, and is encroached upon by outgrowth of neither bone nor cartilage. Barlow suggested that there might be a "periosteal inclusion" between epiphysis and diaphysis, or that the cartilage cells were abnormally arranged along the line of ossification. Parrot considered the deformity due to the cartilage having lost its osteogenetic power (hence his name achondroplasia). The authors report a case and show beyond doubt that these cases are not cases of congenital rickets. The excellent skiagrams show the described enlargements of the diaphyses.

The Treatment of Acute Anterior Poliomyelitis by Nerve Transplantation.—WM. G. SPILLER and CHAS. H. FRAZIER, Philadelphia (*Jour. Am.*

Med., January 21, 1905).—In selected cases of poliomyelitis anterior nerve transplantation is an operation which is fast coming to the front as a desirable procedure. The authors of this contribution conclude that it is not permissible to operate on the nerves within three or four months after the development of the paralysis, because during that time it is not possible to determine accurately which muscles will recover their function and which will not. The muscles which remain paralyzed after six months are not apt to regain their power and the opinion is expressed that after six months is the best time to operate, though good results may follow the operation at a much later date. Two cases are reported that responded well to nerve grafting. The first presented paralysis of the anterior tibial muscle alone; here the peroneal nerve was exposed and the fasciculus of nerves supplying the upper part of the anterior tibial muscle was grafted into the musculo-cutaneous. In a little over a month the improvement was marked. The second case presented paralysis of the peroneal group of muscles, here the musculo-cutaneous was grafted into the anterior tibial nerve, the improvement which followed was very satisfactory.

Congenital Dislocation of the Hip—An Argument Concerning the Method of Its Treatment.—HARRY M. SHERMAN, A. M., M. D., San Francisco (*Jour. Am. Med.*, January 7, 1905).—As an argument this contribution is very strong on the side of open operation. The writer states that since 1898 he has made but one attempt at manipulative reduction; the twenty-eight hips treated by him have all been submitted to reduction by arthrotomy. The oldest of these was eleven years, the youngest ten months. Between these ages there were three in the second year of life, three in the third year, five in the fourth year, one in the seventh year, one in the eighth year, one in the ninth year and one whose exact age is not known, twenty children in all. In each instance the femoral head was put in the acetabulum, cartilage to cartilage. Seventeen hips are known to be in stable position with the heads in the acetabula, at times varying from two months to six years after operation. In three the result is not known, in eight there is either relaxation or subluxation. In considering the so-called "bloodless" operation of Lorenz the writer describes the dangers of fracture, of paralysis, of gangrene, and states that his experience with the operation would go to prove that a very much smaller percentage of cases are reduced anatomically, or even made better functionally than is claimed by Lorenz. He denies that there is any good in the "anterior transposition" and is reminded of a quotation of Bret Harte, "He done his level best," when considering the attitude of some surgeons toward the manipulative operation. What keeps the head from entering the acetabulum in the Lorenz operation is the contracted capsule. In all the arthrotomies done it was perfectly evident that the head could not be forced through this contraction without much laceration and great danger. Looking at it from a surgical point of view the violence is not justifiable when the head can be replaced accurately without any danger to the patient, but the very slight danger of sepsis. He says, "It seems to me to be sensible to really reduce a dislocation when we start out to do so, and choosing a more difficult and

devious instead of an easier and more direct method is very much like making a feat out of a surgical procedure."

Typhoid Coxitis, with Report of a Case, with Skiagrams.—JOHN L. PORTER, M. D., Chicago (*Jour. Amer. Orthoped. Ass.*, October, 1904).—The case reported is that of a boy of ten years who ran a rather severe typhoid. After he had been ill for five weeks he had a marked chill, and pain in the left thigh and hip. The thigh became flexed and very sensitive and near the trochanter a red spot appeared which ruptured and discharged a quantity of thin, yellow pus. This sinus remained open and the joint began to improve. About a month later the other hip became sensitive, the thigh was drawn up, and the boy had a temperature for about ten days. He recovered and got about, the sinus leading to the first affected joint closed and the hip regained almost normal motion. The other hip, however, is flexed to an angle of 90 degrees and is dislocated. The adductors were divided and the deformity forcibly corrected. The author is of the opinion that in this case nature has distinctly pointed out that early evacuation of the joint is the required treatment. Both joints were involved, but the one that discharged spontaneously recovered with almost perfect motion, while the other became dislocated, extensive destruction occurred in the acetabulum and femoral head, resulting in very limited motion. In a patient weakened by a prolonged typhoid, with sensibilities somewhat obtunded, it is easy to see that a slowly progressive synovitis, with little pain, might proceed to a considerable degree without being noticed. Over 50 per cent. in Keen's series of eighty-four cases had spontaneous dislocation. Little is known of the bacteriology. To fill the gap in our knowledge here these joints must be aspirated at intervals, beginning with the acute onset and cultures made from the fluid thus obtained.

The So Called Ischemic Paralysis and Muscular Contracture.—H. SCHRAMM (*Wiener Wochenschrift*, 1904, No. 27).—This condition is usually the sequel to a fracture of the lower end of the humerus or upper end of the radius or ulna where too tight a bandage has been applied perhaps too soon after the injury. Plaster of Paris treatment of fracture as above is prolific of this condition. It is not hard to make the diagnosis. The history and the early contractures rule out radial or infantile palsy and the like. The bandage being removed we see the symptoms and signs immediately; the hand and fingers are blue and cold and in a few hours contract, this contraction going on till the finger nails are often firmly planted in the palm of the hand; the forearm atrophies, the growth of the bones is retarded and the muscles feel like small hard bands. Volkmann contends for the ischemic theory as an explanation and likens the process to rigor mortis. Traumatic muscle inflammation, lesions of the nerves or the lack of proper circulation are other suggestions as to pathology. The condition is rare, Schramm being able to find only twenty-six cases in European literature; nineteen of these were in children under eighteen years of age. He reports one himself. Up to ten years ago the treatment was largely expectant and the prognosis was consequently grave. Today, however, the condition is treated as are other forms of paralytic deformity; tenotomy, tendon grafting,

excision of muscles and resections of ankylosed joints have all been done with success.

NEUROLOGY.

IN CHARGE OF
SIDNEY I. SCHWAB, M. D.

The Pathology of Infantile Paralysis (Acute Anterior Poliomyelitis).—BATTEN (*Brain*, Autumn, 1904).—This investigation into one of the most puzzling pathological problems in neurology was undertaken to prove that the principal lesion in these cases is a thrombosis or embolism of the blood vessels of the anterior horn. Three cases were studied. The first died on the thirteenth day after the onset of the disease, the second died three months after the onset and the third two years after the onset. The conclusions of the author are: (1) That the condition is due to a primary thrombosis of a branch or branches of the anterior spinal artery supplying the gray matter of the anterior horn. (2) That such thrombosis may be produced by many and various forms of infection and the disease is not due to a specific special infection. (3) That the condition is more likely to occur in the lumbar region owing to the blood supply of this portion of the cord being at a point most distant from the heart and the long course of the reinforcing arteries.

The Influence of the First and Second Dentition Periods in the Etiology of Epilepsy.—SPRATLING (*Medical News*, December 10, 1904).—In this paper, which is based upon the careful study of some two thousand cases of epilepsy, studied from the point of view of etiology, Spratling considers the effect of the phenomena of dentition upon the causation of convulsions and the subsequent development of genuine epilepsy. These conclusions are noted: 1. Difficult dentition, that is the piercing of the gums by the tooth, may, in suitable subjects, constitute a sufficient irritant to cause convulsions. 2. In suitable subjects these convulsions may lead to epilepsy. 3. By suitable subjects is meant infants who inherit a neuropathic tendency to disease; whose parents had epilepsy or insanity, or who were alcoholic or suffered from some other general vice that could be transmitted to the offspring in some form capable of vitiating its powers of resistance to disease. 4. Difficult dentition alone in a child who inherited no ancestral taints and who at birth is free from a tendency to nervous disease cannot cause epilepsy. 5. Great caution must always be exercised to lay the true cause in cases of this kind where it belongs, for the reason that gastro-intestinal disorders, the sequelæ of eruptive fevers and other factors common at this age may produce similar results.

The Paralysis-Tabes-Syphilitic Question.—KURT MENDEL (*Neurolog. Centralblatt*, January 1, 1905).—Three cases are described which throw

light on the syphilis-tabes question. Case one is that of a ten-year-old boy whose father had syphilis and at present presents the typical picture of tabes. The mother became infected from the father and developed dementia paralytica. The boy now presents all the symptoms of a progressive paralysis. The cerebro-spinal fluid in this case showed a lymphocytosis. The second case is that of a boy seventeen years old. At ten years of age symptoms began to develop which later showed themselves in the form of a tabo-paralysis. This boy's mother was specifically infected by the father. The third case is that of a man sixty-nine years of age who developed tabes at the age of sixty-seven. This man was specifically infected at the age of fifty-two. These three cases are so clear in their origin that they should be of some interest in the statistics of this question.

Tendon Reflexes and Sensory Disturbances in Tabes Dorsalis.—BREGMAN (*Neurologisches Centralblatt*, January 1, 1905) reports three cases of tabes dorsalis in which there was found this peculiar condition: Absence of achillis reflex, presence of knee-jerk and the presence of sensory changes in the lower extremities. The author sees in this peculiar distribution of symptoms, possible sources of early segmentary diagnosis in respect to the localization. In these cases there were symptoms pointing to the so-called cervical form of tabes, so that it is a justifiable conclusion that the condition of the reflexes is a more reliable and a more delicate symptom of the progress and the exact location of the tabetic process than the sensory disturbances.

Hypertrophic Myopathy Following Typhoid Fever.—BABINSKI (*Revue Neurologique*, December 30, 1904).—This is an interesting contribution to the subject of diseases of the muscles, a subject which is at present in a very important stage of development. The case was that of a woman, aged seventeen years. Following an attack of typhoid fever some four years ago, there developed a stiffness and a difficulty in moving the right arm. The paralysis was in no sense complete, but extension of the hand was impossible. The electrical examination showed a lessened degree of Faradic and galvanic excitability. The case then is a myopathy of the upper right extremity as a result of typhoid fever having in all probability a peripheral origin. This myopathy can be called hypertrophic because there was a dissociation in the normal activity of the group of muscles affected as, owing to the enfeeblement of some, there resulted a state of hyperactivity in the others, producing the usual condition of hypertrophy.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

The Use of the Cystoscope in Cases of Prostatic Hypertrophy.—YOUNG (*Bul. Johns Hopkins Hosp.*, November, 1904).—For viewing the hypertrophied prostate, Young finds the various retrograde cystoscopes to be unsatisfactory, and prefers the simple cystoscope. He has had constructed a chart, consisting of circles, in which the findings of the different views obtained through the simple cystoscope in eight different positions may be recorded. He illustrates the shapes the prostatic urethra may present when distorted by different varieties of prostatic hypertrophy; also, the cystoscopic pictures of the various forms of hypertrophy, and describes the numerous ways of manipulating the instrument in order to properly view the prostatic enlargements.

Luys' Instrument for the Intravesical Separation of the Two Urines.—VALE (*Ann. Surg.*, January, 1905).—The author considers the earlier attempts at urine segregation, illustrating the instruments of Lambotte and Neumann. The principle, however, of the Harris instrument was a new one and entirely original with him. The Luys instrument is amply illustrated, and its method of application described. The author calls attention to the advantages and disadvantages of ureter catheterization and segregation, and says that it is now apparent that each of these two methods of separation has a field of usefulness of its own, one supplementing the other. There are certain well defined indications for the ureteral catheter, but in a large majority of cases the instrument of Luys will be found sufficient to permit a rigorously precise diagnosis of the functional state of the kidneys and lay down the indications for operation. Separation of the two urines has extended far beyond its original indications. It is demanded in all cases of hematuria; in the early diagnosis of renal tuberculosis; in all obscure abdominal tumors as an aid in differentiating between involvement of the kidney and surrounding organs. Several cases are quoted in illustration.

Indications and Therapeutic Value of Prostatectomies.—PROUST (*Ann. des Mal. des Org. Urin.*, November 15, 1904).—Here we find a resume of Proust's article read at the eighth session of the French Association of Urology. He tells us that partial prostatectomies, such as the removal of a median lobe, are to-day almost completely given up. By the suprapubic method in this latter operation the mortality is high and the results indefinite. Because of these results from the partial operation, it is almost universally superseded now by total removal of the gland, which may be done by the perineal route or suprapubically, the combined method having been abandoned. He has collected 813 cases of perineal prostatectomy, with a mortality of 58, or 7.13 per cent. In considering the perineal method we have to take into account certain

complications which are special to this route, such as wounds of the rectum and difficulties or accidents pertaining to the urinary or genital apparel. Immediate suture of rectal wounds are followed by good results. The few cases of uro-perineal fistulae that are observed may be prevented by careful incision of the urethra and close attention to the cysto-perineal drainage. Different forms of incontinence of urine have been observed after perineal prostatectomy. Some are slight, some grave, some temporary, and some permanent. Happily the temporary incontinence is the most frequent, and usually passes off within some months; but it is those cases of definite and absolute incontinence that are the black beasts of perineal prostatectomy—and usually come after the removal of very large prostates. Very rarely strictures have been noted to follow this operation. While orcho-epididymitis occurs, it is only very exceptionally that we meet with suppuration. Decline of the sexual power is almost a habitual consequence of perineal prostatectomy. For, as the operation is practiced, injury to the ejaculatory canal is almost certain, suppressing not only ejaculation but erection. However, the proposition of Young to leave a band of prostatic tissue, while not entirely preventing this complication, certainly makes it less frequent than does other methods.

Among the therapeutic results we see a diminution of the fever a few hours after the operation, infected urine slowly clearing up, digestive troubles rapidly disappearing, and an improvement of the general health following. Where there is a recent complete retention, we must not forget that there has been previously an unknown degree of incomplete retention, and, while the operation re-establishes spontaneous micturition, yet in about one-third of the cases there remains a slight degree of incomplete retention. In the complete retentions that are chronic, operation produces the most striking results. Urination is easy and spontaneous. Because of the necessary regular catheterization before operation, the bladder is not in a state of degeneration, and, once the obstacle is removed, the bladder contractility asserts itself. However, if there is any residuum which persists longer than a year after operation, it may be considered permanent, and is due to far-advanced lesions of the bladder, or to faulty technique. It is in the chronic incomplete retentions that the failures of prostatectomy are most frequent; yet even here complete cure may sometimes be obtained even in cases the least promising, and, though the residuum persists, operation renders the urine more clear and improves its general condition. The lack of improvement is due to the advanced bladder degeneration. The congestive troubles of the first period of catheterism are naturally much improved by prostatectomy, likewise the difficulties of catheterism in prostates much hypertrophied are diminished, and the hemorrhage (which may have been an accompaniment of catheterism before operation) disappears after it.

Calculi are easily removed during prostatectomy, and, above all, the operation renders their return improbable, although secondary calculi have been noted after prostatectomy. While it is true that a return of the urinary difficulties may, in some cases, occur either through the return of the obstruction or from malignancy, post-operative stricture, or degeneration of the bladder fibres, yet, on the contrary, most often the

longer the time after prostatectomy the greater is the improvement. Catheterism becomes less necessary, micturition less frequent, the volume of the diseased kidneys diminishes, and the general health improves, so that the patients have the appearance of rejuvenated old men.

Of the suprapubic prostatectomies there are two operations to be considered—that of total extirpation of the prostate, together with a portion of the urethra which traverses it, and that of subtotal extirpation with a para-urethral enucleation of the gland, the latter being the least dangerous and the operation of choice of the two. Two hundred and forty-four cases, with the mortality of twenty-nine (12 per cent.), have been collected, showing a greater mortality than that from perineal prostatectomy. While the mortality in the supra-pubic route is greater than that in the perineal, the post-operative complications are less numerous. Notably, incontinence of urine and decadence of the sexual power is not observable. The efficacy of supra-pubic prostatectomy is equal, if not superior, to the perineal. In cancer of the prostate, operation offers some hope, especially if the process be limited. As to operation for tuberculosis of the prostate or for chronic prostatitis, the future must decide.

The author here takes up in detail the indications for operation, and seems to prefer to operate only on those cases in which the catheter fails, or in which there are some special complications. He hopes that the future may enable us to diagnose malignancy in its early stages, so that operation may be more promising than in the past.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

Tic-Douloureux and Other Neuralgias from Intranasal and Accessory Sinus Pressures.—SARGENT F. SNOW (*N. Y. Med. Jour. and Phila. Med. Journal*, January 14, 1905) states that many cases of tic-douloureux arise from intranasal and sinus pressure. The acute form, as seen by the author, frequently accompanies a cold with sinus accumulation, and passes away with abatement of the inflammation or by securing proper nasal drainage. The subacute form may present an equal degree of pain, but does not clear up with the removal of nasal obstruction. It starts anew upon slight provocation, showing that a proper outlet must be made from an affected sinus or some nasal pressure demands relief. With the chronic cases any or all internal sinus morbid states, from pus, granulations and polypi to diseased bone, may be expected, and in these chronic cases a most patient, thorough clearing out is the only hope. From the author's experience it would seem that a pain shooting from the bridge of the nose outward and upward indicates an involvement of the anterior ethmoids. A deeper and more intense pain under or behind the eye, and sometimes apparently in the ear or temple, points to

the middle and posterior ethmoids; while a still deeper, splitting pain, radiating outward from the center, sometimes reflected around the anterior third of the lower jaw, is relieved by opening the sphenoid. Accumulations within the maxillary antrum are diagnosed by the localized pain, with sometimes intense muscular tremor and successions of spasms, shaking the head from side to side. The writer has succeeded in relieving twenty chronic cases of *tie-douloureux* in the past seven years by treatment directed to the nose and its accessory cavities.

Acute Septic Inflammations of the Throat and Neck.—Sir FELIX SEMON (*Brooklyn Medical Journal*, January, 1905) calls attention to the confusion in the medical terminology of the acute septic inflammations of the throat and neck. He believes that the diseases which are now known as acute glossitis, of edematous pharyngitis and laryngitis, of acute edema of the larynx, of abscess of the larynx, of phlegmonous pharyngitis and laryngitis, of erysipelas of the larynx and angina Ludovici, should be, from an etiological point of view, classified under one heading, viz., acute septic inflammations of the throat and neck, thereby greatly simplifying matters, the main symptom in all of the above mentioned diseases being the same—that is, inflammation with a large amount of edema. This inflammation can be brought about by any of the various forms of staphylococci and streptococci, bacterium coli, the bacillus pyogenus foetidus, the tetragenous pyocyanus, and others. The present terminology is based only on the particular location of the infection and the beginning of the process. He also calls attention to the seriousness of these cases, with their usually rapid and fatal termination. He advises a bacteriological diagnosis when possible, though, owing to the rapid course of the process, it is often not practical. He mentions one case of his own and some of De Sante's which were saved by the injection of antistreptococcus serum, which should always be given a trial, as no danger can come from its use if the process be the result of some other infection.

Tuberculosis of the Mastoid Process in Children.—HENRICI (*Zeitschrift fuer Ohrenheilkunde*, Band 48, Ergansungsheft) reports in detail eight cases of tuberculosis of the mastoid process in children, and gives in a tabulated form the findings in nineteen mastoid operations in cases ranging from two months to seven years of age. He concludes from these findings: 1. Tuberculosis of the mastoid is a relatively frequent disease in childhood, about one-fifth of all cases of mastoiditis in children being tuberculous. 2. Tuberculosis of the mastoid in childhood is, in the majority of cases, a primary tubercular otitis; that is, the infection is carried by the blood. 3. A primary tubercular mastoiditis is more frequent than a secondary one following a tuberculosis of the middle ear. 4. Tuberculosis of the mastoid in childhood is more often a purely local and relatively benign affection. 5. Usually all of the diseased tissues can be removed by a simple mastoid operation. In only a few cases will the radical mastoid operation be necessary. 6. A positive diagnosis of tuberculosis of the mastoid can rarely be made by the macroscopic appearances at the time of operation. The microscope will

have to decide in the great majority of cases. 7. Facial paralysis is a comparatively rare complication in tuberculosis of the mastoid in children. When present it shows an extensive involvement. 8. Tuberculosis of the pharyngeal tonsil bears no special relation to tuberculosis of the mastoid.

Iodoform Emulsion as an Irrigating Fluid in Antral Disease.—WITZEL (*Archiv für Laryngologie und Rhinologie*, Band 16, Heft 3) has found that when an alcoholic solution of iodoform is dropped into water the solution will be converted into an emulsion, the iodoform being suspended only for a short time, but long enough to be used as an irrigating fluid. The author has employed this emulsion in a number of chronic antral suppurations with good success.

The Ultimate Results of Cauterization of the Lower Turbinate, with Therapeutic Suggestions Based Upon Histological Findings.—GOODALE (*Boston Medical and Surgical Journal*, Vol. cli., No. 26) gives the results of a histological examination made in a series of cases which had been previously cauterized for swelling or hypertrophy of the lower turbinates, and which had reported later with a recurrence of nasal obstruction. After reviewing the immediate and remote alterations produced in the nasal tissues by cauterization, he lays down the following rules: In the first place, if the object is to contract a relaxed or distended mucous membrane, we should endeavor to reach the submucous and deeper layers where the lymph spaces and blood vessels are chiefly situated, producing at the same time the minimum amount of disturbance to the mucous membrane itself. This result is best attained by deep linear applications, as narrow as possible, of chromic acid, or of the galvano-cautery, or by submucous cauterization, which is an admirable and most effective method. On the other hand, if we seek to diminish the amount of nasal fluid, as in certain forms of excessive post-nasal secretion, we may advantageously sacrifice a certain number of canaliculi in the basement membrane by broad, superficial applications to a definite area of the septum and lower turbinates posteriorly. In the event of recurrence of enlargement after cauterization, we should remember that a more impervious and resistant mucous membrane probably exists, together with a proportionately greater amount of connective tissue than originally was present, and consequently each subsequent cauterization is less likely to bring about contraction of the parts. Under such circumstances it is probably best to dispense with further cauterizing, and proceed immediately to the excision of a definite amount of obstructive tissue.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

Operative Treatment of Senile Ectropion.—TERSON (*Ann. d'Oculist.*, November, 1904).—The first step in the operation consists in excising the strip of redundant conjunctiva from the outer to the inner commissure. A triangular area of skin adjoining the external angle is then excised, the base of the triangle being at right angles to the palpebral fissure. A suture is passed through the center of the base to the apex, and two or more lateral sutures are then inserted. The traction thereby exerted is upward and outward. Terson advises against any interference with the tarsus or the placing of conjunctival sutures. For several days prior to operation the skin at the outer angle is softened by inunctions of lanoline and vaseline oil.

The operation is not applicable to entropion due to facial paralysis, to cicatricial ectropion, or to ectropion *sclerodermique*.

Posterior Cortical Cataract of Traumatic Origin.—U. KOLLER (*Ann. of Ophthalm.*, January, 1905).—A perforating triangular flap wound of the cornea was followed by the development of a delicate star-like opacity at the posterior pole. In addition there appeared a very small anterior capsular opacity corresponding to the inner angle of the corneal wound, and a somewhat diffuse, bean-shaped opacity in the anterior layers of the lens.

The distinction between posterior *polar* and posterior *cortical* cataract should be borne in mind. The former is wholly without the lens, is congenital, and owes its origin to incomplete involution of the central hyaloid artery. The latter is *within* the lens, is larger, and assumes a star shape in conformity with the lenticular structure. Posterior cortical cataract is very common in degenerative affections of the deeper structures of the eye, but is rare after traumatism. It occurs sometimes after penetrating wounds; again merely after simple contusion, without tearing of the lens capsule or suspensory ligament. The site of the anterior lenticular lesion often bears no relation to the site of the posterior lenticular opacity, which may develop into total cataract, but which usually clears somewhat and then remains stationary.

The most plausible explanation is that of Zur Nedden, who assumes that there occurs a momentary displacement within the capsule leading to a loosening of the attachments of the lens fibres, and permitting fluid from the vitreous to enter between the lens fibres.

Treatment of Separation of the Retina by Subconjunctival Injections of Saccharine Solutions.—DIANOUX (*La Clin. Ophthalm.*, December 10, 1904).—Four to five c.c. of a solution composed of sodium chloride one gram, cane sugar four grams, and distilled water one hundred grams, is injected subconjunctivally in the direction of the bulbar equator. The

resulting large chenosis is reduced by massage and a pressure bandage. The injection is repeated on the second day, and again on the fourth or fifth. The eye is examined after the third injection. If there is no improvement, the treatment is discontinued. If the separation has disappeared or has notably diminished, the injections are continued in decreasing doses. Not more than ten injections are given in all. During the treatment eserine and pilocarpin are used as adjuvants.

Cases of Retinal Separation.—A. GREENWOOD (*Ophthalmology*, January, 1905).—The author's cases are divided into four groups: (1) Retinal separation occurring in highly myopic eyes; (2) retinal separation dependent upon choroidal neoplasms; (3) retinal separation occurring during a retinitis of pregnancy; (4) idiopathic separation of the retina. With reference to treatment Greenwood believes that very few cases of retinal detachment are suitable for operation. Primary reattachments in the myopic cases are usually not permanent. Detachments due to tumor demand, of course, enucleation. Detachments the result of the retinitis of pregnancy become reattached without operative or other interference. Idiopathic and traumatic cases are most amenable to treatment. Subconjunctival injections of salt solutions combined with scleral puncture and cauterization give the best results.

Enucleation with the Aid of Raspatory, Followed by the Insertion of a Skin-Fat Flap.—ROLLET (*La Clin. Ophthal.*, December 10, 1904).—The conjunctiva around the cornea is divided as in the ordinary operation. The recti muscles are then caught up on a strabismus hook and separated from their scleral attachments with a raspatory. Sutures are then passed through each. The obliques are separated in the same manner, and finally the optic nerve is divided.

A circular area of skin, the diameter of which is a little greater than the diameter of the cornea, is dissected up from the deltoid region, along with its subcutaneous cushion of fat, transferred to the socket and sutured to the recti tendons with catgut. There is thus formed an island of skin surrounded by conjunctiva.

The advantages of this procedure are twofold. In the first place the stump is reinforced and, secondly, a new attachment is afforded for the recti muscles, thus insuring greater mobility for the artificial eye.

The Importance of Testing the Ocular Muscle Balance for Near as well as for Distant Vision.—S. THEOBALD (*Bulletin Johns Hopkins Hospital*, January, 1905).—The writer points out the frequent discordance between the behavior of the muscles in distant and near vision. The normal state of muscle balance at thirteen inches, as determined by the vertical diplopia test is from 2 to 4 degrees of exophoria. Recently Theobald has noted differences in the vertical muscle balance for far and near, a difference apparently bearing a distinct relation to asthenopia.

SOCIETY PROCEEDINGS.

ST. LOUIS SURGICAL CLUB.

Meeting of November 8, 1904.

The meeting was called to order 9:00 P. M., President Dr. William S. Deutsch in the chair.

SEPSIS POST-ABORTUM.

Dr. Ernst Jonas read a paper with the above title, for which see page 178.

DISCUSSION.

The president said that he had been so fortunate as to be present at this operation, and was very favorably impressed with the accurateness with which Dr. Jonas found the pus. It was not a palpable pus sac as is usually found, but the doctor had mapped out the area by careful study of the conditions, and it was really surprising how precisely one could go into that region and find such a small quantity of pus.

Dr. John Young Brown considered the case reported by the essayist one of exceeding interest and congratulated him upon the result, and especially upon the manner in which he had treated the case in the early stages of the infection. The speaker believed such cases should be treated with a dull curette, rather than with the sharp instrument. Where the uterus is small, the finger was better than either. In regard to the virulence of the case reported, it was of the character generally seen in cases of the so-called "virgin sepsis." It had been pointed out by Tate that puerperal infections in primipara were more virulent than in multipara. As to the use of the streptococcus serum, he agreed with the essayist that it had little or no effect. He had used it at the City Hospital many times, but had been unable to see any definite action from its use. He felt that an autopsy would have been of great interest in this case, as it would have demonstrated exactly where the abscess was located. In his experience he had never seen a case of so-called pelvic cellulitis. In over two hundred cases of pus in the pelvis operated on by him in the last year, the infection invariably began in the vagina, extended to the uterus and then out into the tubes. In the autopsies he had found the same conditions existing as they also existed in the work he had witnessed done by other operators. He had recently operated on a double pus case following an abortion. The woman had a stormy voyage through a virulent streptococcus infection, streptococci being demonstrated in the uterine scraping, as well as in the blood. She developed a wide peritonitis and two pus tubes were enucleated through the abdomen; patient was drained with glass and recovered. He believed that in all cases of puerperal sepsis it was extremely important to examine, not only the uterine and vaginal secretions, but also the blood. This was a routine practice at the City Hospital. He did not believe the Pryor operation a justifiable procedure, unless there was present a palpable lesion. He had done this operation three times, but did not think well of it.

Dr. John Morfit reported a case in which the conditions were similar. He stated that he had discarded the use of the antistreptococcic serum two or three years ago, after giving it a strong trial in every case that came under his observation up to that time. The accuracy with which Dr. Jonas has located the abscess in this case showed most careful watchfulness and study.

Dr. V. P. Blair said that the most interesting thing about Dr. Jonas' case was the active way he kept at it. That was the way he got his results. Dr. Blair had recently seen a case of extremely virulent infection twenty days after confinement. The husband admitted having been infected and thought he had infected his wife. Hesitating to cut out the uterus he placed two catheters in the cavity of the uterus and irrigated con-

tinuously with hot water for three days, with great improvement of all symptoms; later he made an incision back of the uterus and let out the pus. Though he did not see the case after that, he understood that she made a good recovery. He did not believe the infection was gonorrheal, for the symptoms were not gonorrheal. After seeing her the urethra sloughed out. In this, as in most streptococcus infections, there was the characteristic stoney, hard, induration. He had treated one streptococcus puerperal infection coming under observation in the subacute stage, with antistreptococcus serum with apparent help and no evident suppuration following.

Dr. Willard Bartlett felt that Dr. Jonas was to be congratulated that he got the patient well. It was still something of a mystery to him in spite of the doctor's vigorous work. His experience had been that when a streptococcic infection becomes general the patients die. He had a case of general streptococcic infection develop following a Scheede operation for varicose veins of the leg. Three hours after operation the patient had a temperature of 103, the next morning he had a temperature of 105, and three days later he had a temperature of 107.5. There was a thrombo-phlebitis of the internal saphenous vein. These symptoms continued for two weeks, the temperature varying from 105 to 107, the patient taking no nourishment and all of the time delirious. The ulcer, however, had healed when he died. Dr. Bartlett called attention to the misnomers in the terms septicemia and pyemia as commonly used. A German surgeon named Myer had given the nicest classification of terms for blood poisoning that he had ever heard. Myer said call all these a mycosis, then, when there are metastatic abscesses, call them a tissue mycosis; on the other hand, if there is a development of germs within the blood stream, call that a blood-mycosis, a strepto-mycosis or a staphylo-mycosis, as the case may be.

Dr. Chas. H. Dixon said that in Dr. Jonas' case there was one point that he thought was deserving of greatest praise, and that was the accuracy with which he had located the pus. The amount of pus was not more than a tablespoonful, and it was accurately localized. He wished the doctor would tell them what the outcome was following those chest aspirations, as he did not say whether the lung responded or not.

Dr. Francis Reder had come into contact with quite a number of cases of sepsis following abortion. There were frequent and severe chills and high temperature, and he had had recoveries without any operative interference. The reason there was no operative interference was because the pus focus could not be located. Fortunately, the constitution of these patients was strong enough to enable them to overcome the septic condition. He had also had some deaths in cases of sepsis following abortion. It was reasonable to believe from anatomical facts that these abscesses would be found in the broad ligament about the region of Poupert's ligament, or, next in frequency, in the median line midway between the umbilicus and the pubic bone. In such cases he would feel inclined to resort to operation, but thought he would enter at the anterior fornix and endeavor by blunt dissection to find the way into the pus focus. Dr. Brown said that he had never seen a case of pelvic cellulitis. The speaker believed there were cases of parametritic infections of secondary origin that often were nothing more than a pelvic cellulitis.

Replying to a question by Dr. Reder, Dr. Jonas said that the pus cavity was in the broad ligament.

Dr. Reder recalled a case under similar conditions where he accidentally got into the pus cavity. He opened the anterior fornix of the vagina, and by blunt dissection found the pus. This was in puerperium at full term. The baby was seven weeks old and the patient markedly septic when he saw her. The doctor had said that this was an easy dissection, and that he did it under cocaine. He did not believe the doctor had found a very edematous condition in his case if it proved one of easy dissection. It was not always easy, although he had met with inflammatory conditions where such a dissection was comparatively easy, where the peritoneum could be peeled off without any difficulty, giving good access to the region of the iliac vessels.

Dr. Jonas, in closing, said that he purposely selected a case of rather frequent occurrence in order to bring out the important points mentioned in his paper. Several members of the society had seemed to think the dissection hard, but it was surprisingly easy. He did not see why it should be hard, since there was no inflammatory attachment of the peritoneum. Had the abscess developed a good deal further, the anatomical dissection would have been harder. To reach the pus cavity was comparatively easy, because the inflammatory condition was not yet far advanced. He had learned from Dr. Brown's remarks that virgin infections are frequently more severe than infections in women who have borne children. As to the anti-streptococcic serum, he, too, had no great faith in it, and the main reason for using it in this case was that it was a charity case, and he did not want to leave anything undone. As to Dr. Brown's statement, that there is no such thing as a pelvic cellulitis, he thought Dr. Brown had meant that there is no genuine case of primary pelvic cellulitis, and in this he agreed with Dr. Brown perfectly. The infection must, of course, come from some part of the mucous membrane of the genital organs. In this case it came from the uterus. He believed the infection did not migrate through the tubes, but penetrated through the uterine wall along the lymphatic vessels of the uterus. If the infection had passed through the tubes there would have been more disturbance palpable in them, but there was not the slightest thickening in that part of the body. The only difficult thing was the diagnosis; after that there was nothing very hard. The only question was, was the diagnosis correct? There was nothing felt except some fixation and resistance. So far as Dr. Morfit's case was concerned, he believed that he would have treated the case differently. A uterus so badly damaged should be removed. It would be much easier to drain the infected area after removing the uterus, having a wide space for drainage. With regard to the nomenclature, he thought Dr. Bartlett need not be troubled. All these cases could go under the head of sepsis, and the man who knows his pathology could make the differential diagnosis between the different kinds of sepsis. As to Dr. Dixon's question, the lung responded very well, but slight adhesions being noticeable.

ECTOPIC PREGNANCY COMPLICATED.

Dr. Charles H. Dixon reported a case of ectopic pregnancy and ruptured ovarian cyst. One Sunday afternoon Mrs. V., who had been in good health and who had enjoyed a hearty dinner, was taken with a very severe pain in lower abdominal region. A physician in the neighborhood was called, and thought it was a case of severe intestinal colic. Her regular physician saw her four hours later, and he thought there was a rupture of the appendix. Dr. Dixon saw her at eight o'clock in evening. She was anemic, cold, clammy, fainting, almost pulseless. He gave a diagnosis of rupture of a tube with a hemorrhage. She had been married four years, had one child three years old and a baby a little over a year old. After the birth of her second child she had menstruated twice, and then in August she had a profuse menstruation. She missed the first part of September, and attack was on the 10th or 12th, or about three or four days over her time of sickness. She was taken to the hospital, and as it was impossible to get an ambulance she was taken in a carriage, and when she arrived at the hospital was pulseless. She was operated upon at once. The abdomen was full of blood, profuse hemorrhage going on, and after getting the right tube up, the rent was found in the tube. The uterus was found adherent posteriorly. The adhesions were broken up and the bleeding stopped. After that, in mopping out the cavity, he was surprised to find that the bleeding continued, but from the left side, and found a ruptured ovarian cyst about the size of half his hand. The bleeding from the ruptured cyst was profuse, and he had to ligate the vessels. The patient made a good recovery. He had three of these ectopic pregnancies inside of a month, and, strange to say, they were all on the right side. He could recall six such cases, all on the right side.

LIGATION OF COMMON CAROTID.

Dr. John Morfit presented a specimen showing the ligation of the common carotid artery following laceration of the internal carotid and the three branches of the external carotid and the internal jugular vein. The patient lived four and a half days after the ligation and died of cerebral edema. He saw her fifty minutes after the accident had taken place. She was pulseless and almost unconscious. Upon turning her head there was a gush of blood which was controlled by forceful packing. There was some improvement within the next fifteen hours and the artery was then ligated.

TYPHOID PERFORATION.

Dr. John Young Brown reported a case of typhoid perforation. He said that the patient had come to the hospital the early morning of operation with history of having been sick three weeks. He had been treated at the dispensary. On examination a diagnosis of possible typhoid perforation was made. Operation was immediately done. Incision was made through the outer border of the right rectus muscle, the appendix was found very acutely inflamed; the pelvis was full of pus. A number of coils of small bowel were found acutely inflamed. About ten inches from the ilio-cecal valve two typhoid perforations were found and closed. The pelvis was full of filth; a glass drain was inserted and also two gauze drains, the wound closed with through and through silkworm gut sutures. When patient went on the table his temperature was 103.8°, pulse 120. The evening after the operation temperature had dropped to 100.8°, pulse 106. While it was too early to give a prognosis in the case, the patient's condition seemed favorable and he hoped to report it in full at the next meeting of the society.

Meeting of December 14, 1904.

ESOPHAGEAL STRICTURE.

Dr. John C. Morfit presented a paper with the above title, for which see page 183.

DISCUSSION.

Dr. Malvern B. Clopton reported the case of a child about the age of Dr. Morfit's patient. The child was presented at St. Luke's about four weeks after the lye had been taken. The stricture was about two and a half inches above the stomach. The child was able to eat only very soft foods and fluids. It was fed for a few days on milk and fluids, albumen water, etc., and gained considerably. But the mother was compelled to stay at home, and she refused to allow the child to remain at the hospital. It was kept at home for about two weeks, and when it returned to the hospital it was impossible to get anything through except a small filiform. By going in twice a day it was gradually dilated, and again the mother took the child home. Three weeks later it was brought back terribly emaciated. The filiform would not then go through. After three or four attempts at swallowing, the child began to take some milk; then a filiform was gotten through, and it was possible to dilate it again. Dr. Mudd had been absent from the city and about this time returned. He had the child anesthetized, and attempted to pass a small, soft bougie. An olive-tipped esophageal sound with a whalebone handle was then used, and with no apparent effort it slipped by the stricture. The dilation was then carried on to about one-fourth of an inch. The child did well for three days, and was taking its food excellently, when there was some disturbance and fever began to rise. There was a filling of the pleural cavity on one side, and it had to be opened. About a quart of fluid and food was found. The child died shortly afterward. Practically a new ulcer had formed where the stricture was, the necrosis about the esophagus was considerable and led into the plural cavity, resulting

in the child's death. The opening in the esophagus at the autopsy was found not as large as a slate-pencil. Practically everything administered after the third day had gone into the plural cavity, not into the stomach, proving that instrumentation may be very dangerous sometimes.

Dr. Willard Bartlett said it was a singular fact that a perforation in an esophageal dilatation not only caused pleuritis, but also gangrene of the lung. His experience had been limited to three cases in the living and quite a number found at autopsy. Two were benign strictures. One had been treated partly by himself. One case treated by a prominent physician in 1893 resulted in a damage suit. The patient made such an excellent recovery that, years later, the doctor used pictures of the half-grown girl in connection with his published report of the case, to which the family objected. The second case the speaker had treated about five years ago. Dr. Witherspoon had done a gastrostomy. The esophagus had to be dilated once a week, and Dr. Bartlett saw her about eight months after the original operation. The dilatations were being continued at that time. She got so that she could swallow everything and was in good condition. The third case was one of malignant stricture, which he had seen about a year ago. After a few examinations had proved the impossibility of passing anything but a small olive-tipped bougie, operation was proposed and refused, so that nothing further had been learned with regard to the case.

Dr. Deutsch had hoped the essayist would bring out what the x-ray showed of these esophageal strictures. Some congenital conditions are very clearly seen by it. He wondered if any one had tried the sawing method, with catgut from the mouth to the stomach. If there was any possibility of these ulcers occurring as readily as in Dr. Clopton's case, that might be a very dangerous procedure on account of it producing bleeding.

Dr. Ernst Jonas called attention to the danger of instrumentation. In Berlin a gentleman came to the clinic with a typical complaint of esophageal stricture. A student attempted to make out the location and degree of the stricture, and put in a small bougie; there was a rush of blood and the patient was lying dead on the floor. It was a case of aneurism, and the stricture was due to pressure of the aneurismal sac. Strictures of the esophagus sometimes improve without instrumental dilatation, even though they may be very marked. In the Martha Parsons Hospital he had seen a baby about six months old that could hardly swallow water: most of it would be regurgitated, only a little being swallowed. About a year after he had first seen the child it could swallow ice-cream and soft foods without difficulty. He had let it alone, thinking that if the stricture became more complete he would perform a gastrostomy. Of all operations for stricture of the esophagus the most simple is gastrostomy. If the stricture is in the cardiac region, it might be advisable to make the operation in two steps, as Dr. Morfit had done. If with this be combined the sawing method, it would seem to be about all that could be done. All wounds in the esophagus should not be completely sewed up. Drainage must be established.

Dr. C. H. Dixon had seen three cases of stricture of the esophagus within the past three years, in two of which gastrostomy was performed, and in one of them there was nothing done after the gastrostomy except feeding. Two years later the child was stout and healthy, and the opening into the stomach was but a fistulous tract. Another child was operated upon at the clinic, gastrostomy being done. Three days after the operation it developed measles and then had a severe double pneumonia. It got better of that, and two weeks later bougies were passed and dilatation was kept up regularly for three months; then all trace of the child was lost. Pickett reports a case in which a bougie was introduced carefully, and, striking the point of stricture, they could see pulsation at the end of the bougie, and made a diagnosis of aneurism from this pulsation. A case was reported by Jungnickel of a child two and a half years old who developed stricture after diphtheria. The stricture persisted during convalescence. Operation showed two strictures, one at level of thyroid and one 12 cm. below. It was

supposed to be due to the diphtheritic membrane coming away, contraction of scar tissue resulting.

Dr. John Young Brown was specially impressed with the remarks of the essayist in regard to rectal alimentation. He concurred fully in the view expressed, and entered a vigorous protest against delay in cases of this character when patients were starving for want of proper nourishment. He believed that stricture of the esophagus, both malignant and benign, demanded early gastrostomy. In benign cases gastrostomy enabled the surgeon to practice retrograde dilatation and to nourish patients through the fistulous opening. In malignant cases patients were made more comfortable and life was greatly prolonged.

Dr. Willard Bartlett, in reference to rectal feeding, called attention to Dr. Murphy's statement, that a man kept up by rectal feeding lives about as long as a man who does not receive such treatment. Dr. Barek had reported a case that lived eight weeks with only rectal alimentation, but a man can live about that long on water alone. The so-called Nassilov operation was first proposed in 1888, and Rehn, a surgeon of Frankfurt, was the first to try it on the living in 1898. The operation was done on the back, working through to the esophagus from behind. A few foreign bodies have been successfully removed in that way.

Dr. Morfit, in closing, said he could not conceive of any advantage in a trans-plural or trans-thoracic operation over a simple gastrostomy. The relation of the esophagus to other vital parts behooves the surgeon to exercise every care in assuming any risks. He believed the average surgeon could attack the esophagus anteriorly, posteriorly or diaphragmatically, but he could not see that these dangerous operations had any advantage over the operation usually done. An operation for malignant growth did not offer any advantage over feeding the patient through a fistula. These cases reach the surgeon late, they come with conditions more easily prevented than cured, and for that reason he had laid emphasis on the oil feeding. There is almost no mention of it in modern text-books, and but little is said of it in the older ones. One modern text-book says to moisten the bougie with a little water. The oil is nourishing, and it enables particles of food to pass readily. Most of the cases that recover are in children. If the slightest amount of nourishment can be gotten through there is hope, but if even water cannot pass the child will succumb as quickly as a grown person. The reason why children recover is that the tube is getting relatively larger with the child's growth, though the cicatrix, unless it is annular, is stationary. Cutting the stricture he believed to be absolutely and dangerously uncertain, and there is no reason to promise or expect anything from such an operation to warrant taking the risks involved. The possibility of an aneurism causing obstruction has been alluded to in most works on the subject. Examination for aneurism is advised. He could not see that the x-ray would be of any practical use. It would locate the stricture, but would not show the caliber. If something could be gotten through it might be possible to gauge the extent, but practically it would be of no use.

The sacculation might be filled up with mercury or bismuth, and a skiagraph taken, but it would be of no material aid. The method of putting in a funnel-shaped tube (permanent intubation) presupposes dilatation. It is impossible to get in one of these tubes until a passageway has been effected by means of a bougie. The matter of stoppage of these strictures by food particles should engage attention. One case here in St. Louis was to be operated upon before a class of students, when suddenly a particle of food was coughed up, and the patient was then able to swallow water, nourishment could be taken and the child got well without operation. Irrigation before examination was a procedure that the speaker felt should be impressed upon the physician by the case mentioned and by his own experience with case No. 1, reported. As to the effect of rest on strictures, the conditions in the esophagus and urethra were analogous. In the case he had operated upon the patient, two days before death, was able to swallow a little milk, and the day before his death he vomited food that had been put in through

the tube, proving the perviousness of the esophagus. As to the possible relation between the gangrenous condition in the lung and the stricture, he felt it could be nothing more than a coincidence. The question had suggested itself to him: Was there any effect of the caustic upon the adjacent structures, something more than the local effect of this lye? The stricture was certainly very extensive, and involved more than the internal muscular layer of the esophagus.

RESECTION OF SMALL BOWEL.

Dr. John Young Brown presented this specimen. The patient had a gunshot wound in the abdomen and his condition was quite bad. The abdomen was opened, and after the usual search there were found six perforations of the bowel and nine of the mesentery. The mesentery was considerably damaged. Six feet of the small bowel were resected. Anastomosis was made with the Murphy button. The button was passed on the twenty-sixth day. This case was irrigated and drainage made by means of a glass tube in the pelvis, placed through a stab wound above pubes.

PERITONITIS.

The second specimen was evidently a wide-spread peritonitis. He had a pulse of 130 and was in bad shape. An incision was made through the outer border of the right rectus muscle and the appendix was found perforated at its base. The pelvis was full of filth and pus. The appendix was tied off because it could not be buried, though he did not favor this method of dealing with the stump, as a rule. The ideal method was to get the appendix entirely out and to close the wound as a gunshot wound, or crush it and bury the stump with a purse-string suture. He had rarely found it necessary even to cauterize. In this case nothing more was done except to remove appendix and drain. The glass drain was placed in the recto-vesical pouch and the patient put up as soon as possible.

PUS TUBES.

The third specimen, two large pus tubes, were presented merely as a curiosity to show their size. It was a gonorrheal infection and the patient had gone through the various stages of boroglyceride tampon medication, etc., during the past six years. The tubes were taken out and the patient recovered.

Dr. Blair, referring to the turning in of the end of the appendix, mentioned the case of a woman who had bled to death as a result of turning in the appendix.

Dr. Clopton said that there were cases where the angiotribe did not stop the bleeding.

Dr. Bartlett said that when in Rochester last February he noticed that Dr. Will Mayo did a circular purse-string operation, using a clamp and ligating the appendix with catgut, but his brother did not. He asked Dr. Will Mayo why he did this inasmuch as his brother did not *tie off the appendix*, and the reply was he had a woman bleed almost to death and his brother had not had that experience.

Dr. Brown said that every time he opened an abdomen he took out the appendix if it was convenient. In all such cases he clamped off and buried them with purse-string sutures.

Dr. Bartlett said that the main idea in draining these cases seemed to be to drain off the thyroid secretion and not drain off the blood.

Dr. Clopton stated that plain rubber tissue rolled up and used as a drainage tube leaves just the hole and no accumulation about it, so that it proves most satisfactory.

SARCOMA OF INFERIOR MAXILLA.

Dr. M. B. Clopton reported a case of sarcoma of the inferior maxillary. The woman had come to him two days before. He cut out a little wedge-shaped section for exami-

nation and it proved to be a large spindle-cell sarcoma. He operated the next day. There was nothing unusual about the operation except that he removed the bone without making a perpendicular incision through the lower lip, making a semilunar submaxillary incision, in order to prevent disfigurement.

Dr. Bartlett said the perpendicular incision does not disfigure in all cases. He had seen a man in whom union was so perfect that one could not tell where the incision had been made.

Meeting of January 11, 1905.

SILVER FORK FRACTURE.

Dr. Nathaniel Allison read a paper on this subject, for which see page 188.

DISCUSSION.

Dr. M. B. Clopton thought the most striking thing was the success of operation in the second case for the picture taken before showed the epiphysis displaced; after the operation it showed that while the osteotomy was well up on the bone the correction seemed to be perfect. He presented some plates to show that fractures near the lower end of radius were difficult to diagnose. The first plate was that of a woman of fifty years who fell in the typical manner for Colles' fracture. When first seen he considered it a sprain of the wrist, but later found that she had a transverse and longitudinal fracture of the bone. The next plate was that of a child. There was no deformity but a good deal of pain. X-ray showed a subperiosteal fracture of radius. In both cases there was a good deal of pain but deformity in neither. He also had an interesting picture of a longitudinal fracture of the phalanx due to a book having fallen upon the finger.

Dr. Ernst Jonas has seen a great many such fractures in Prof. Bergman's clinic, and the best results were obtained when put up without any splint, just in plaster of Paris. The arm was held firmly by an assistant, the hand with thumb upward between pronation and supination. There was made a severe pull on the thumb and the hand bent extremely to the volar and ulnar side. This dressing was left on for about two weeks, after this frequent change of dressing. Good results were the rule, a bad function the exception.

Dr. C. H. Dixon said that a dressing he had heard referred to a number of times by Dr. Steele was one used by Dr. Moore, of Rochester, with good results. He used a piece of tape around the wrist, then supported the arm by a similar piece of tape, allowing the arm to rest at the site of fracture, the weight of the hand holding it in the proper position.

Dr. Clopton said he had seen some of the cases treated in that manner and the results were very unsatisfactory.

Dr. John Moritt thought the observance of the case had as much to do with the successful result as anything else. He sometimes started with an anterior splint, and on the second or third day used a posterior splint, or again he would use a plaster dressing. By watchfulness of the case during the first ten or twelve days one could mould the radius satisfactorily. The classical pistol position he was opposed to because it was most painful and had no advantage over a straight posterior or straight anterior. He did not see why Dr. Allison would not undertake it for cosmetic reasons. In the case of society women, for instance, it might be a matter of considerable importance to correct the deformity. Often the x-ray would show considerable displacement when the correction was apparently good. This is easily understood if we remember that skiagrams are shadows and not photographs. Dr. Allison had taken up the correction of this deformity. He dealt with a condition rather than its cause, although the importance of its prevention was not underestimated. The success of his method of correcting the deformity warranted its employment in most cases.

Dr. M. B. Clopton said the main thing was the initial reduction. When one had

gotten that, half the battle was over. He used the straight posterior and straight anterior splint and had gotten excellent results. He believed that Dr. Morfit's statement was correct, that the case must receive frequent attention. While an interne at the hospital he had seen two nasty contractures of the forearm due to the use of plaster of Paris. Almost every young practitioner thought the thing to do was to use plaster of Paris. The patients would go out and perhaps would not return to the hospital for ten days, in the meantime the pain of the first two days would have entirely subsided. Then one would not notice anything particularly wrong, but later the ischemic contraction would begin and in two cases the arm became practically useless. For this reason he did not use plaster of Paris dressing on a fresh fracture of the wrist.

Dr. V. P. Blair had brought with him two arms from the dissecting room, thinking they might be of interest. A point that Dr. Allison had mentioned was the drawing forward of the radius by the pronator radii teres, passing from the condyle to the shaft it would help to pull the upper end forward. The pronator quadratus extended up farther than was generally thought to be the case. In cases when the triangular cartilage was not torn loose from the ulna there could be but little change of relationship between the lower end of the radius and the latter bone, but the radius at point of fracture could be drawn forward and inward and thus add to the deformity. Another muscle, the supinator longus, passing from the external condyle of the humerus down to the styloid process of the radius, might at least help to maintain the deformity. Falling with the hand dorsi-flexed and pronated, the lower end of the radius would be toward the mesial plane and the shaft would be directed down and slightly inward so that a vertical resistance transmitted through the first row of the carpus would tend to drive the lower end of the radius toward the radial side, farther helped by the scaphoid, which was most prominent and received most of the force, articulating on the outer (anatomically) part of the lower end of the radius. Further, the posterior border of the lower end extended down as a lip, the force transmitted to that lip through the dorsi-flexed carpus tended to send it back. When the shaft snapped the lower fragment was rotated in its attachments, the inferior, anterior and posterior radio-ulnar ligaments, the annular ligaments and lower part of the pronator quadratus, so that as the lower lip turned back the upper mass of the fragment was thrown forward and might drag the lower end of the upper fragment forward with it. The statement that the original violence was mostly responsible for the deformity was proved, he believed, by the slight tendency for the full deformity to recur after reduction.

Dr. Allison, in closing, said Dr. Dixon had referred to the use of a tape as suggested by Dr. Moore, who had written a paper on the subject in 1872. Moore was of the opinion that there was always luxation of the ulna, although that was a disputed claim. Thinking the triangular ligament at the lower end of the ulna was always ruptured, and that this was a condition which required special attention. Dr. Allison could not agree with this. As to Dr. Clopton's remarks on the treatment on Colles' fracture, such opinions cause much of the trouble with Colles' fracture: Surgeons and general practitioners claim they always get good results by treatment with the anterior splint. If the cases were gone over the statements of Hamilton and Seudder, that half the cases show deformity, would be found true. Dr. Allison was opposed to the anterior splint used alone. It was likely to allow a relapse of the first reduction. Plaster is a thing not everyone can use. It should not be applied all around the arm, but in such a way as to hold the fragments and press them into position, the plaster affording a definite support. In the case of the child he had moulded the plaster before applying it. The extreme pistol position was so painful that he hardly thought the majority of patients could stand it. Replying to a question by Dr. Morfit he hardly thought anyone ever got an absolutely perfect result.

Dr. Blair called attention to Dr. Allison's remark, that a deformity in a young child was likely to increase with growth. The speaker believed that it would always decrease with growth.

Dr. Clopton and Dr. Blair disagreed with Dr. Allison on this point.

BOOK REVIEWS.

VORLESUNGEN UEBER ALLGEMEINE GEBURTSHILFE. Von Dr. HEINRICH BAYER, Professor der Universität Strassburg. Verlag von Schlesier & Schweikhardt. Strassburg. (G. E. Stechert. in New York.) I. Band. Heft 1. Entwicklungsgeschichte des weiblichen Genitalapparates. Price, \$2.00. I. Band, Heft 2. Das Becken und seine Anomalien, \$2.50.

These two volumes form a part of a work on "General Theoretical Obstetrics," which, in seven volumes, will deal with the following subjects: Embryology of the Female Genitalia, Anatomy of the Pelvis, Physiology of Pregnancy, Labor and the Puerperium, and, finally, Diagnosis and Therapy in Obstetrics.

The first volume, devoted to the development of the genitalia during the fetal and post-fetal life, contains largely the results of the author's own investigations. The subject is presented in a clear and interesting form, so that even the student will have but little difficulty in informing himself on this somewhat intricate subject with the help of this book.

The second volume, on the pelvis and its anomalies, is distinguished by the same lucidity of diction. This work contains illustrations on special tables which fairly represent the highest achievement of modern lithographic art.

Our American text-books only too often neglect the theoretical side of obstetrics in their endeavor "to comply with the needs of the students," and it is, therefore, especially interesting to realize, after a careful perusal of the volumes before us, that even the purely scientific and theoretical part of obstetrics can be fully presented in a manner that, at least, should be within the grasp of the medical student of today.

"If somebody should ask me," says the author in his preface, "what advantage the practical obstetrician could derive from a knowledge of anatomical and embryological facts, I should refer him to the answer given to a similar question by that eminently practical man Franklin: 'Try to apply it in practice.'"

PROGRESSIVE MEDICINE. Vol. IV. December, 1904. A Quarterly Digest of Advances, Discoveries and Improvements in Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, of Philadelphia. Octavo, 374 pages. 79 Illustrations. Per annum, in four cloth-bound volumes, \$9.00; in paper binding, \$6.00; carriage paid to any address. Lea Brothers & Co., publishers, Philadelphia and New York.

The December issue of *Progressive Medicine* marks the final installment of this quarterly digest for the year 1904. It comprises a series of essays on diseases of the digestive and genito-urinary tracts, on the surgery of the extremities and a practical therapeutic referendum.

If we consider the enormous volume of medical literature published every year, its distribution in thousands of publications, the multitude of languages, it at once becomes obvious that there is a need of a resume of this literature presented in just the manner in which it is done in *Progressive Medicine*. It is desirable to keep the price of such a publication within the means of the average practitioner, and it was, therefore, a move in the right direction when last year the publishers announced that they would reduce the subscription price one dollar per annum. Now that the four volumes of the year have appeared, we regret to observe that this reduction of price was accompanied by an omission of the departments of Pathology, Physiology and Hygiene. We consider it extremely deplorable that either the editor or the publishers placed the value of these three departments so low that they could be omitted just for one dollar, or possibly they were excluded as simply theoretical branches of medicine, and, therefore, not adapted to the needs of the "busy practitioner."

INTERSTATE MEDICAL JOURNAL.

VOL. XII.

MARCH, 1905.

No. 3.

ORIGINAL ARTICLES.

SOME THOUGHTS ON EXOPHTHALMIC GOITRE.*

By H. TUHOLSKE, M. D., of St. Louis.

The short paper which I beg to read at this meeting does not aim to present an exhaustive study of the subject, but merely to indicate some few points which I believe merit consideration at this time. Permit me to introduce the subject by presenting this specimen of goitre with its history and to follow it with some thoughts suggested by it.

Mr. R. L. B., aged twenty-one, a law student, of medium weight and height, presented himself for examination in June, 1904. He comes of healthy parents, had never heard of a case of goitre or any nervous disease in his family. Had lived a regular life, used tobacco moderately, no stimulants at all, was of studious and rather sedentary habits. Never had undergone any serious illness; cannot recall any sudden shock, special worry or fright. Commenced to be aware of great lassitude, indisposition to study and of weakness in the early part of the year; consulted an ophthalmologist because of pain back of his eyes. Patient is very nervous and excitable, sleeps poorly and feels weak; exophthalmos and enlargement of the thyroid well marked; heart normal in dimensions, at the base systolic bruit; apex-beat very strong, loud and diffuse, shaking the whole chest; pulsations of the arteries of the neck with thrill and bruit; pulsation in veins; thyroid pulsation expansive; Stellwag's and von Graefe's signs present; skin thin, delicate, flabby and moist; marked tremor of the hands, less of the tongue and lips; has attacks of tachycardia, frequent vomiting spells and diarrhea. Temperature normal; pulse of fair tension, small, 120. Treatment, rest, strophanthus and x-ray. Patient left for home after three weeks, not improved. Saw patient again in October, the proposed operation not accepted. Again strophanthus and x-ray treatment every other day, ten minutes, four-inch exposure. Agreed to operation in December and went to hospital; for one week, rest in bed, cold applications to neck and belladonna. Operation December 11, 1904; would not consent to be operated on under local anesthesia; excitable, pulse 115 to 120; ether anesthesia. Kocher's angular incision. Sterno-mastoid muscle not only freed at inner border,

* Read before the St. Louis Surgical Society, February 8, 1905.

but separated in order to be able to raise it, instead of drawing it outward, which latter disturbs anatomical relations. Inferior thyroid ligated before bifurcation; recurrent found and traced; superior thyroid artery large as radial; firm attachment of capsule to cricoid cartilage; much hemorrhage from inferior thyroid veins, which were large and very friable. Separation of thyroid fairly easy; junction of thyroid halves irregular; drainage.

Patient reacted fairly well; pulse 130. End of first day, pulse 120; temperature 99; second and third days, great excitement and restlessness, pulse varying from 130 to 165; great weakness; status thymicus. From fourth day gradual improvement; tenth day pulse 90, respiration 22; wound healed promptly; fair recovery. February 1, 1905, remaining lobe decreased in size, no bruit over it, no tachycardia, no visible pulsations, no bruit of arteries, no tremor; heart beat quiet, good strength; reduction in size of neck one inch and a half; still slight exophthalmos.

The junction of the two halves of the gland was peculiar. There was no isthmus, but not the separation of the lobes in absent isthmus as described by Marshall¹, but a junction in the middle line of the two lobes, which for a distance of two inches formed a continuous whole; the specimen shows where separation was effected.

Many years ago Billroth, the immortal surgeon of Vienna, said that the future of medicine lies in surgery. Was it a hope born of an appreciation of the possibilities of surgical procedures, or was it the estimate the distinguished operator placed on the limitations of physiological chemistry and pharmacodynamics? During the last two decades surgery has most successfully invaded the domain of internal medicine and many subjects formerly readily conceded thereto, now belong to the Grenzgebiete, the border territories between medicine and surgery. Among these subjects the subject of exophthalmic goitre occupies a commanding position; in fact, its treatment is one of the burning questions of the day. A distinguished internist² says: "Medicinal measures are notoriously uncertain, operative measures seem to offer the greatest relief," and, according to an equally distinguished surgeon³, "Internal treatment must be first considered, because the disease not infrequently disappears spontaneously." We grope among the remedies medicinal or operative without clear and precise indications for either. The close relationship which exists between vascular exophthalmic and other forms of goitre is perhaps an element of confusion, tending to obscure our views of symptoms, treatment and results.

Exophthalmic goitre was first described by Parry⁴; in 1786 the exophthalmos, the tremor, the twitchings and vascular disturbances were noted. The Italians claim priority for Flajani. Graves described it in 1835, and Basedow in 1840. The chief symptoms of the disease are enlarged thyroid, exophthalmos, tachycardia and tremor, with the presence of

many nervous phenomena, and of often one or all of the following signs: Stellwag's, the abnormal separation of the lids; Moebius, the insufficient accommodation without diplopia, and Graefe's, the slowness with which the upper lid moves in the vertical line, when following the changes in the visual plane.

We should *ab initio*, distinguish between cases grafted upon thyroids otherwise diseased and the pure form, the anatomical basis of which⁵ is the presence of a diffuse hyperplasia of the epithelial parenchyma, combined with a morphological and topical change of the cells, the absence of colloids and great vascular increase. In 1800 Sandstroeme⁶ described the accessory thyroids, the glandulæ parathyroideæ. Little importance was attached to their discovery until in 1895, Kohn, of Prag, found in the interior of the gland the inner glandulæ parathyroideæ, which, on account of their structure, he called epithelial bodies, "epithelkoerperchen." His studies included the function of these bodies, which are found to play an important role in relation to post-operative tetany. The hypophysis cerebri, with its recognized relation to the thyroid, has of late been carefully examined after death from thyroid disease and while not uniformly, has in many cases shown evidences of hyperplasia and the presence of chromophile cells. To the thyroid itself the following functions are credited⁷: that it renders harmless substances in the body that have a toxic action (mucin is believed to be one of these), that it does this by virtue of the secretion of the thyroid gland, which is probably an organic iodine combination, the iodothyron, and is contained in colloid. The secretion is abundant in normal thyroids; it enters the blood through the lymphatics. This meager account of the functions of the thyroid cannot be accepted as sufficient, in view of the fact that congenital thyreoaplasia is accompanied by dwarfed development of the body, by cretinism, by myxedema, by hypothermia, pale, flabby, sodden skin and every evidence of greatly reduced blood pressure. What is the relation of the absent thyroid to these phenomena of interfered with development and continued low blood pressure? Cryle's experiments on blood pressure seem to prove that blood pressure is maintained by the action of the internal secretions on the vaso-motor system. One of these, the secretions of the supra-renal capsule, by experiment and clinical experience, has been proven to possess that power. Most interesting, as bearing on this question, is the work of hosts of experimenters and observers, the results of which Sajous⁸, in a recent article in the *Journal of the American Medical Association* of February 4, 1905, thus summarizes: "Summing up the facts adduced, they seem to me to sustain the contention that the pituitary body, the adrenals and the thyroid jointly govern all oxidation processes and, therefore, the functional efficiency of all organs. If, as stated, the functions of the pituitary, the adrenals and the thyroid are interdependent, thus constituting what I have termed the adrenal system, impairment of the functional activity of

either one of them must morbidly influence that of the others. Over activity of the thyroid, for example, by surcharging the blood with this organ's internal secretion will over stimulate the pituitary body, and through them (the anterior and posterior) the adrenals, thus causing the symptom-complex of general hyperoxydation, exophthalmic goitre.

Conversely lowering of the thyroid correspondingly lowers all oxydation processes, as instanced by hypothermia, of myxedema, cretinism, etc. For the further elucidation of the subject I may be permitted to place side by side the results claimed in experiment with the results of clinical experience. Adrenalin, hypodermically injected, or increased activity of the adrenals, causes contraction of the central vascular trunks and engorgement of the peripheral capillaries, as indicated by general peripheral hyperaemia. (Adrenalin acts directly on the muscular fibers of the arteries and arterioles, producing contraction of these vessels). Insufficiency of the adrenals is followed by engorgement of the central vascular trunks and depletion of the peripheral capillaries as indicated by general pallor. Hypersecretion of the thyroid produces over stimulation of the adrenals, hence the vascular overactivity, such as we see in exophthalmic goitre. Diminished thyroid secretion or total absence of it produces adrenal insufficiency, as indicated by the depletion of the peripheral capillaries, pallor, etc. If this be true, thyroid extract or its organic iodothylin compound administered to a healthy person should produce adrenal overactivity; that is, some or all of the symptoms of exophthalmic goitre. Common experience has taught us the truth of that proposition. This is a case in point: Patient had, on his own responsibility, taken thyroid extract for obesity. Within five weeks he took nearly 5,000 grains of the extract. He lost thirty pounds, and on examination had marked exophthalmos, with both Stellwag's and von Graefe's signs, the thyroid gland was enlarged and pulsated, and there was a thrill over it; a fine tremor of fingers and tongue was evident, the cardiac apex beat was displaced outward, pulse 120 and mental disturbance. Under the use of arsenic, and the withdrawal of the extract, most of the symptoms disappeared after a few weeks, the exophthalmos alone remaining. Therefore, thyroid extract administered in exophthalmic goitre must increase the symptoms; in the reduced thyroid activity of some forms of goitre, or after the removal of a large part of it, thyroid extract administered should relieve the symptoms of depression, apathy, peripheral pallor and myxedema. I have the record of a case in which the conditions indicated prevailing, a most rapid recovery followed the administration of the extract.

I know of nothing better to prove our proposition than the experience of Kocher. Kocher has tried organic preparations of thyroid, ovarium, thymus, supra-renal capsule. As a rule they produce little effect, the least the ovarin. As unique, Kocher considers the rapid increase and aggravation of all symptoms in his case 10, under thyroid extract ad-

ministration. In eighteen of his cases great increase of most symptoms occurred in a short time, heart's action and pulse more frequent, increase of tachycardia, tremor and excitement. In cases 8, 9 and 10 occurred frequent vomiting and diarrhea, in case 16 great loss of strength, in case 14 insomnia, in case 33 increase of the vascular symptoms of the thyroid, in cases 42 and 46 striking loss of weight and strength, in case 60 increase of headache, heart bruits and exophthalmos; in case 6 exophthalmos and glycosuria, in case 5 great tremor of the whole body and great headache, in cases 10 and 13 increase of the thyroid gland and its vascular bruits, tachycardia, unusual frequency of pulse, insomnia, headache, loss of hair, increased tremor; in fact, of all symptoms of exophthalmos.

The etiology of the disease leaves much to be cleared up. By some writers it is considered a pure neurosis, by others a disease of the sympathetic nerves, by still others as originating in a lesion of the medulla or restiform body. Chlorosis or anemia, or both, often present in the premonitory stage, have been considered to be the cause. Goitre is much more frequent in women than in men; according to Buchan, in the proportion of 46-1. Shock, fright, worry, continued nervous exhaustion, possibly toxins furnished from the gastro-intestinal canal, may be the ultimate cause of the glandular activity. The weight of evidence at this time, is on the side, which claims that the disease is due to a hyperactivity of the gland, hypersecretion and delivery of the secretion into the blood, without a certainty as to the primary or initial cause of such overactivity. The treatment is hygienic, medicinal, electrical and surgical. Strophanthus has reduced the heart action in some cases; ergot is warmly recommended; belladonna occasionally palliates, if administered to the point of faucial dryness; cold applications, long continued to the neck or heart, give relief; perhaps some temporary benefit is derived from galvanism. The iodides have been much depended upon; they are not indicated. Thyroid extract or iodothylin do harm. The x-ray will do some good; it has done so in a few of my cases. Chas. H. Mayo¹⁰ used it with benefit in ten cases, and his explanation of the effect of the x-ray is logical. According to that authority, the effect is to reduce glandular activity and to reduce absorption by the lymphatics. The sclerotic condition of the gland and of the lymphatics should reduce secretion and its delivery. I doubt that this may occur to such an extent as to give rise to symptoms of thyroid insufficiency as after the removal of the greater part of the gland.

Adrenalin can be useful when, from long-continued overactivity of the thyroid, overstimulation of the adrenals ends in exhaustion and adrenal insufficiency. Then adrenalin, hypodermatically administered, may for a time substitute adrenal function.

Operative procedures resorted to, are resection of half or three-fifths of the enlarged gland; ligation of the superior and inferior thyroid

arteries; removal of half the gland and isthmus, with ligation of its arteries and ligation of the inferior thyroid artery of the other side; section and resection of the cervical sympathetic and exothyreopecty. The last has at present few advocates. The operation on the sympathetic, introduced by Taboulay, based on the theoretic reasoning of Abadie, seems not to rest on a sound foundation. On the whole, the results of the operation are less favorable than of those which attack the gland itself. Jonnesco practices bilateral resection. He says,¹¹ in an article of August, 1899: "I consider that the time has now arrived to grant to this new operation, performed by so many surgeons, the place due it among the praiseworthy feats of modern surgery, and there are no remote effects of the operation, and in skilled hands no mortality."

According to notable authorities,¹² the only symptom that seems to be favorably influenced constantly is the exophthalmos. Tremor and tachycardia persist in almost all cases, and the general condition has not been improved. Fatal cases of galloping cachexia are reported. The bilateral resection of the cervical sympathetic cannot be considered an indifferent procedure. Unless other nerve paths act as substitutes, functional disturbances must follow their removal. Recent research credits them with the function of a medium of communication between thyroid, hypophysis cerebri and adrenals. If they are cut, the functional activity of the adrenals must cease. The absence of the sympathetic should make itself felt.

On December 12th I resected both superior cervical ganglia for glaucoma. The patient made a prompt operative recovery, and is said to have improved. I watched for symptoms or signs which might be ascribed to the absence of the ganglia; I could observe only slight decrease in ocular tension. I shall watch the future of the case with much interest. Partial strumectomy, with or without the additional ligation of the artery of the other side, with the present view of the pathology, should be the normal surgical method. Patients with very excessive pulse rate, 150 and upward, should be treated by rest, belladonna and the x-ray preparatory to the operation. The details of the operation, the provision for drainage, the avoidance of injury to the recurrans, the preference of the anesthetic, require no mention before this society.

The intense activity in physio-chemic research work may some day suggest an antidotal treatment to the iodine poisoning, which is at present believed to be the result of thyroid overactivity. Late reports claim much, perhaps too much, for the natron salt of sulphanilic acid, for Merk's thyroid serum,¹³ and for rodagen, which is the milk of thyroidectomized goats containing 50 per cent. of sugar of milk,¹⁴ and for which Burghart and Blumenthal claim favorable results in the treatment of vascular exophthalmic goitre. This latter treatment should be tried before surgery steps in.

REFERENCES.

1. Arch. for Chirurgie, June, 1892.
2. Osler's Practice of Medicine.
3. Bergman and Mickulicz's Practice and Surgery.
4. Osler's Practice.
5. Haemig, Archiv fuer Chirurgie, 1897.
6. Pineles, Grenzgebiete, 1904.
7. Bergman and Mickulicz.
8. Journal of Amer. Med. Assn., February 4, 1905.
9. Notthaft, Centralblatt fuer innere Medicin.
10. Med. Record, New York, November, 1904.
11. Jonnesco, Bucharest Journal, 1899.
12. Bergman and Mickulicz.
13. Kirnberger, Centralblatt fuer innere Medicin, February 6, 1904.
14. Chemisches Centralblatt, 1902, page 229.

AN HISTORICAL REVIEW OF THE DEVELOPMENT OF KNOWLEDGE OF THE RELATIONS OF THE MIND AND THE NERVOUS SYSTEM.*

BY CHARLES GILBERT CHADDOCK, M. D., St. Louis.

PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM, MEDICAL DEPARTMENT, ST. LOUIS UNIVERSITY.

Ladies and Gentlemen:—In answer to the request with which the executive committee of the Medical Faculty of this University honored me, I consented to attempt to interest you for an hour by the presentation of some subject bearing upon the history of medicine.

Last spring I prepared an address for the annual meeting of the American Medico-Psychological Association; and in what I shall have to say to you to-night there will be much of what I compiled for that occasion. You will pardon me this double use of historical material when I add that the address mentioned has not yet been printed, and that I have made such changes and additions as seemed required by the circumstances of this evening.

In these days of rapid advance in science, we are so busy trying to keep pace with actuality that we rarely have time to review the past. The Faculty, it seems to me, has done wisely to offer to its students some opportunity to rise above the immediate and practical grind of assimilating elementary facts and gain a larger view of the world.

One of the most valuable lessons of history is its overwhelming demonstration of the inherent tendency of the human mind to confound error and truth. Scientists, more than all others, need to ponder this fact. The real progress of the world depends upon the growth and dif-

*This lecture, delivered January 30, 1905, as the opening one of the historical course, as is indicated in the text, with slight changes, is a repetition of the annual address delivered before the American Medico-Psychological Association, at St. Louis, in June, 1904.

fusion of exact knowledge. Scientists themselves have often placed almost insurmountable obstacles in the pathway of progress. Aside from superstition and all that engenders and nourishes it, the greatest obstacle that humanity has had to encounter in its toilsome march toward truth and freedom, is traditional authority crowned by the halo of a great man's name. Recall the shattered convictions and opinions that mark the long pathway of human progress, and be not too dogmatic nor overintolerant of ideas that contradict your own. To-day the judicious mind accepts no man's name as the demonstration of the truth of an idea, theory, or conclusion. As Soury has said, "Science is larger than the brain of any one man. Science is not, it becomes." This is one reason why science appeals so little to humanity in general: man longs for completeness, for a rounded and finished whole, for something to satisfy the emotional side of his nature. This is found in art, in literature, in religion. The great scientists of all ages were also human; they often were as weak as those they deemed weak from ignorance. There is no real difference between the longing of the scientific mind to evolve a theory of the cosmogony, and the faith that accepts some supernatural explanation of the universe that solves all the problems of life and reconciles us with death.

To one looking backward over the rugged landscape of history, the great names rise up like isolated peaks. Thus is emphasized the contrast existing between the past and present—the change of intellectual level on which humanity progresses. Now there are so many contributors to the advancement of science, and all workers are so intimately interobligated that the light of originality loses individuality.

As an introduction to a review of the growth of knowledge of the relations of the nervous system and the mind, let me give you the status of knowledge early in the nineteenth century. Kant said in 1800: "I have called these diseases of the head disorders of consciousness, just as disturbance of the will is called a disease of the heart. I have considered the phenomena of these maladies only in the soul without any desire to discover their root, which lies, properly speaking, in the body, and which may very well have its principal seat in the digestive apparatus rather than in the brain." In letters written by Kant apropos of the dedication of Soemmering's work to the great philosopher of Koenigsberg, in which Soemmering succeeded to his own satisfaction in establishing that the mind had its seat in the fluid that fills the cavities of the brain, Kant accepted Soemmering's theory as the only tenable one. He remarks elsewhere that though the majority of human beings had the subjective sense of thinking in the head, the deduction was erroneous because it assumed that the cause of the sensation lay where it was experienced. The immortal Pinel, in 1809, wrote: "But it seems in general that the primitive seat of this alienation (mania) is in the stomach and intestines, and that it is from this center, by a kind of radiation, the

disorder of the understanding is propagated." Esquirol wrote in 1838: "Insanity has not always its point of departure in the brain, but rather in the centers of sensibility placed in various parts of the body." In a German work entitled "An Introduction to Philosophy," published in 1893, Paulsen says: "There are no thoughts in the brain; one might just as well say that thoughts were in the stomach or in the moon." In answer to this, Flechsig remarks, more facetiously than scientifically: "That thought takes place in the brain is the conviction of numerous great thinkers—while until now I have never heard any but the crazy and imbecile say that the mind was in the stomach or the moon."

When we compare these ideas with those of antiquity we shall be struck by the fact that for more than two thousand years, philosophy and reverence for traditional authority, equally with superstition, did little but retard the growth of knowledge of the relations of the brain and mind.

The Homeric poems seem in large part responsible for the perpetuation of primitive ideas of the nature and seat of the mental faculties, as shown in the common metaphors of heart, heartiness, heartfelt, heartless, etc., as terms for mental qualities or states. We all know that exalted emotion is subjectively accompanied by sensations in the epigastrium and about the heart. We now see the reason for this ancient assumption, with Polybius, in the effect of cerebral excitement to alter the usually quiet activity of the heart and vascular system and respiration. The physiologic sensation is thus probably responsible for the early theory that the thoracic organs were the seat of desire, emotion, passion, thought. The diaphragm (phrenes) and heart, for some reason, appeared to be of equal importance, possibly because of the rhythmic movement of the diaphragm in respiration and its spasmodic action in emotional states. This accounts for the word phrenitis, still in quite general use as a designation for insanity, and the common word frenzy, which in their primitive meanings signified disorder of the diaphragm.

It does not seem possible that the subjective sense one has of thought as taking place in the head, would be without influence in directing attention to the brain as the seat of mental activity; and it is not impossible that self-observation, equally with anatomic knowledge gained in dissection and vivisection, led Alcmaeus to regard the brain as the seat of sensation and reason. A contemporary of Pythagoras, Alcmaeus lived in the fifth century B. C., and was, according to Galen, the first known investigator to resort to dissection and vivisection, and the first to regard the brain as the seat of the mind. It is worthy of note in passing that the theory of sleep promulgated by this ancient observer is maintained by some today; "Sleep is due to the retreat of blood into the veins (anemia); awakening, to its diffusion."

The ideas of Alcmaeus have come to us in part through the writings of Aristotle, who cited them only with a view to controvert them; and in

this he succeeded completely, for his location of the mind in the heart and blood remained valid, in one form or another, almost to our own day.

The view of Alcmaeus of the brain as the organ of the mind must certainly have been much older than himself, though entertained by but few of his own day, if Aristotle is to be believed. It is remarkable that Alcmaeus regarded the brains of all animals to be alike; that is, that they were all of the same fundamental nature, and that all that distinguished the human brain from that of lower animals was the greater development of intelligence. By this physiologist is found foreshadowed, if not stated, the recent theory of Flechsig concerning cortical centers of projection and centers of association.

Plato (429-347 B. C.) gives us a very clear statement of localizations of mental faculties. His division of the soul into three parts seems to be paralleled by our conventional and artificial division of the mind into intellect, feelings and will, which we now properly regard only as aspects of psychic activity. Plato, in his philosophic division of the soul into faculties, doubtless was logically driven to find separate, though associated, seats for them. Plato placed the thinking soul (*nous*) in the head; the *thymos*, or executive soul (*will*), in the heart, and the sensitive soul in the liver. The liver for him was the center of sensations and desires, the heart was supposed to be the seat of the will (courage, initiative), the reasoning faculty lay in the brain. By Plato the spinal cord was for the first time given a function. He considered it the connecting link between the three souls, and even as constituting, in a way, three mental localizations. The brain is not, as by Alcmaeus, considered the seat of perception. For example, sounds, though passing by the ear and the brain, were perceived by the liver, and that through the medium of the blood vessels.

Turning now to the father of medicine, we note the same triple division of the soul. Hippocrates, who placed the common sensorium in the blood and heart, considered the brain to be a gland, an opinion for which he gives many scientific reasons. For example, on account of the brain's great size and its consequent power to absorb and give forth humidity the hair of the head grew long and was abundant.

The Hippocratists were well aware of the fact that injuries to the brain caused apoplexy, paralysis, loss of speech, delirium, insanity, etc., and even that hemiplegia was caused by contralateral cerebral lesions; but this clinical knowledge had no effect to alter the error of regarding the blood as the source of intelligence. Yet we cannot blame them unless we blame likewise Willis (1621-1675) and Descartes (1596-1650), who practically held this doctrine as propounded by Aristotle.

It seems strange at first thought that wonderful work on the *sacred disease* (epilepsy), which was written by an immediate follower of Hippocrates and contemporary of Aristotle, probably by Polybius, has had

so little effect upon knowledge of the brain and mind, and incidentally of disease; for in this treatise the mental and moral faculties are placed definitely in the brain, and epilepsy is regarded as a disease having nothing whatever to do with divine influence. It is worth while to give some of the ideas of this writer: "We think, understand, see, hear, through the brain; by it we recognize the beautiful and the ugly, evil and good, the agreeable and disagreeable, pleasure and pain. But if the brain be not healthy, either too hot or too cold, we are delirious, or have fears and terrors and dreams and cares that torment us without reason. Upon whether the alteration of the brain depends on mucus or bile, the insane are calm, depressed and anxious or violent and excited. As for the diaphragm (phrenes) it has received its name by accident, for it has nothing to do with thought or intelligence, any more than the heart, though some maintain that we think by the heart, and that this organ is the seat of sorrow and care. It has nothing whatever to do with them. Doubtless the heart contracts, just as the diaphragm trembles and convulses in response to great joy or sorrow. But neither has anything to do with the mind; the brain alone is the organ or interpreter of intelligence."

There must be reasons to explain the lack of fecundity of such clear statements of facts. In the first place, there was no convincing proof that they were facts. The Aristotelian philosophy, with the idea of the blood as the seat of the mind, acquired the weight of authority. Authority prevails when two doctrines equally unproved are presented to us for consideration.

Aristotle (384-322 B. C.) was essentially a critic of the works of others; for it seems highly probable that the greater part of his writings were the result of his reading of physiologists and anatomists rather than the product of personal observation. He knew nothing of the anatomy of mammalia except at second hand. For him the brain was merely a refrigerator to cool the blood, and it occupied only the anterior part of the head; the posterior portion of the cranium was hollow. The superior intelligence of man depended upon the fortunate combination of a large refrigerator and a powerful and very warm heart. Aristotle's conclusions about cerebral physiology were based upon a series of scientific arguments that leave nothing to be desired as far as logic goes. In the first place, he asserted, doubtless perpetuating an ancient scientific error, that the brain was absolutely insensible to mechanical stimulation. Again, with the exception of cephalopods, invertebrate animals had no brains; but invertebrate animals were sensitive, and, therefore, sensation must depend upon something besides the brain—a conclusive argument against the assumption that the brain is the organ of sensation. The brain was absolutely devoid of blood; but all experiments showed that in animals that had blood only those parts of the organism were sensitive that were vascular, while those parts that were without blood vessels were insensible

Study of the brain itself showed that it had no relation whatever with the organs of sense. Thus arguments based upon prevalent anatomy and physiology showed beyond all doubt that the heart was the central organ of sensation; and here Aristotle placed the common sensorium, which, since his day, has wandered far and wide in the organism.

The object of metaphysicians since the beginning has been the discovery of the "common sensorium," and it will be well to make clear its meaning at once. By the term "common sensorium" is understood the place in the organism where all the elements of the mind are united and correlated, and thus, according to the usual notion, brought into relation and subordination to the soul or Ego.

In his study of mental phenomena, Aristotle was less liable to err, owing to the very fact that they were studied as phenomena independent of a material basis; and here he displays that acuteness of thought and perspicacity in definition that have caused him to exercise so great an influence upon philosophic thought through ages. Aristotle had a perfectly clear understanding of the nature of elementary anomalies of the senses and intellect. To him hallucinations were perfectly familiar, and his observations on somnambulism might date from the nineteenth century. The modern doctrine of neuro-psychic degeneracy and its relation to genius is quite as clearly set forth by Aristotle as by the modern advocates of the theory enunciated by Morel and developed by a host of modern observers.

Straton, one of the followers of Aristotle, makes this profound remark concerning sensibility: "It is not in the foot that we have pain when we hurt it, nor in the head when it is bumped, nor in the finger when we cut it. Our whole body is insensible with the exception of that sovereign part (the organ of perception); it is there that the blow immediately develops the sensation which we call pain."

In the third century before our era Cleanthus reveals the beginning of the notion of psychic heredity when he says that "we are not only like our parents in body, but also in soul; in our passions, our characters and manners, and in the disposition of our organs; and, therefore, the body is the soul."

To Herophilus and his great contemporary, Erasistratus (third century B. C.), of the school of Alexandria, is due the honor of making the first real advance in knowledge of the brain and nervous system. Their pre-eminence depends upon their work in dissection and vivisection of both men and animals. Herophilus distinguished sensory and motor nerves, although he did not definitely distinguish nerves from tendons. Erasistratus recognized the same differentiation of nerves into motor and sensory, and, besides, gave a most remarkable description of the brain itself, and he reached the conclusion that the superior intelligence of man depended upon the richness of his brain in convolu-

tions. Strange to say, this fact, now universally recognized, was not accepted by the greatest of physicians, Galen.

In the French edition of the Institutes of Anatomy, by Bartolin, in my possession, bearing the date 1647, I read: "The external surface of the brain presents fissures, convolutions and twists that resemble the intestines. It must not be concluded with Erasistratus that nature intended these to subserve reason, for asses as well as men have them; nor that they are to diminish the weight of the brain, as Aristotle would have us believe; nor that they do not serve any purpose, as some maintain; they protect the blood vessels which pass in the depths of the fissures, and thus the vessels run no risk of being broken by the continual movement of the brain, especially at the time of the full moon, when the brain swells decidedly in the cranium." This writer gives no credit to Galen, for this remarkable argument, with which he would annihilate the fact enunciated by Erasistratus, though Galen was its author.

This example of puerile reasoning should not prejudice us in our estimation of Galen's services to science. His teachings definitely placed the mental functions in the brain. Though he probably never dissected a human brain, he was thoroughly familiar with the gross anatomy of the brain and spinal cord. His great knowledge of anatomy was practically exclusively derived from the dissection of animals, especially monkeys. A marble torso in the Museum of the Vatican, which probably antedates Galen, is an enduring monument to the fact that dissection of the human body could not be practiced during that age in Italy—the trunk of a man is represented with all the organs of a monkey in place.

In the brain itself, to Galen (131–201), the ventricles were of first importance, seemingly because he assumed that it was only by means of cavities and tubes that vital connections and communications could take place. Thus he gave much attention to the study of the ventricles and their interconnections. To his mind the *pneuma* entered by the nostrils, attained the lateral ventricles, passed downward to the fourth ventricle, and thence was distributed to the brain and throughout the body by the nerves, conceived as tubes. For Galen, the function of the corpora quadrigemina was to regulate, by variations of pressure, the flow of the psychic *pneuma* or spirits through the passage from the third to the fourth ventricle; the pineal gland is expressly proved to be non-nervous in structure and to have no functional relation to the brain. (Galen was clearer sighted than Descartes.) The serous secretion of the ventricles was regarded by Galen as an excretion which found its way downward into the nares and pharynx through the bones of the base of the skull; in this the pituitary body had a function, as its name (mucous gland) indicated. It is interesting to remark in passing, as an example of the persistence of ancient errors in names, that the French speak of *rhume de cerveau* (cold in the head) for coryza.

Galen conceived three theoretical forms of *pneuma* (psychic, vital,

physical), and he translated them into psychic force, sphygmie force and physical force. Psychic force is the principle of intelligence, memory and thought, which, as we have seen, operates through the brain and nerves; but we still find mental qualities attached to the others—courage, anger, character reside in the sphygmie force, and sensual desires arise from physical force. Nowhere in Galen's writings is found anything to correspond with the idea of the common sensorium of Aristotle, a fact probably due to Galen's great desire for physical demonstration. Galen has the supreme merit of having continued and developed the experimental methods in anatomy and physiology of the School of Alexandria. To examine his masterly work in clinical description of diseases of the brain would take us too far. One example will suffice to show the correctness of Galen's knowledge of nervous anatomy and physiology. When the physicians asked in controversy how it was possible that movement could be retained with loss of sensibility, he replied: "Have we not sometimes seen the contrary—conservation of sensibility with loss of movement?" And in explanation he said: "All voluntary movements are executed by muscles. If the nerves going to muscles are affected, their movement is lost; but if the nerves affected are those distributed to the skin, it is the sense of touch that is implicated."

Of the followers of Galen, Oribasius (325–400), physician to the Emperor Julian, with Plato, admitted the three seats of the soul and the three forces of Galen. Concerning delirium, mania, melancholia, phrenitis, lethargy, apoplexy, epilepsy, etc., regarding them as diseases of the first principle, he could only entertain the view that the lesions lay in the head, either uniquely and primarily, or secondarily through sympathy with some other parts. In his writings, we find the first reference to the physical stigmata of degeneracy. "In badly formed heads, the palate should be examined and it will be found to be high-arched. In persons that present pointed obliquity (oxycephaly), in certain cases, it will be noted that the teeth do not correspond exactly; that is, that the superior and inferior teeth do not come together in a straight line, so that the mouth is drawn up and twisted. Such individuals, you will find, are subject continually to headache and inflammation of the ears."

Through the Middle Ages nothing of great importance was added to practical knowledge of the brain. Here and there, as at the School of Salerno, certain new observations were made, but, in general, knowledge of the brain was only the interpretation or misinterpretation of the Greeks and Galen. Owing to the importance of the ventricles in the theories of Galen, it is not surprising that they became considered to be of great importance, though Galen himself regarded them only as the reservoir of psychic force which spread throughout the brain. This perhaps accounts for the fact that Avicenna (980–1036) localized the faculty of imagination and thought in the middle ventricle, memory in the pos-

terior ventricle, and the common sensorium, including perception, in the anterior ventricle. Avicenna represents, perhaps, the highest development of medical science among the Arabs, but without doubt his knowledge was derived from the ancients and Galen, and it seems probable that the great renown in which Arabic medicine was held during the Middle Ages was due to the fact that the study of the earlier scientists among them was comparatively continuous, whereas in Europe it was interrupted. For this reason, too, the knowledge which came into Europe from the Arabs and was passed on by the early schools of medicine, was colored by the interpretations that had been put upon the writings of Hippocrates, Aristotle and Galen by the Arabs. Thus, throughout the Middle Ages, we find scholastic interpretations and applications of the Aristotelian and Galenic ideas in relation to the mind and nervous system that show the Arabic influence.

The names of Sylvius (1478-1555), Versalius (1514-1564), Varolius (1543-1575), Fallopius (1523-1562) and Harvey (1578-1658) mark the transition to modern observers; but none of these men, who left their marks in the history of knowledge of the human body, had anything more than a Galenic or Aristotelian conception of the relations of the mind and nervous system. When Varolius described the ventricles of the brain and their secretions, he did nothing more than restate the theory of Galen, and his localization of mental functions is exactly that of his renowned predecessor.

The consummate anatomist and physiologist, Descartes, was necessarily occupied with the ever unanswered question of the nature and seat of the mind. His opinion may be cited as a good example of the state of knowledge of his age: "The parts of the blood which attain the brain serve not only to nourish its substance, but principally to produce a certain very subtle wind [ancient *preuma*], or rather a flame very bright and pure, which is called animal spirits. The arteries that bring the blood from the heart, after dividing into an infinite number of small branches and forming a fine tissue net-work which is spread out like a carpet in the bottom of the cavities of the brain, again unite around a certain small gland placed near the middle of the substance of the brain at the entrance of the cavities, where they possess a large number of small holes through which the most subtle parts of the blood they contain enter the gland, but which are so small that the grosser parts of the blood cannot pass through them. The coarser parts pass on to give nourishment to the brain in general; the finer parts become animal spirits which pass from the small gland to the ventricles, thence to the brain and into the nerves. Thus they attain the muscles, having power to cause them to change their form." The conception of Descartes does not differ in its simplicity from the ideas of the ancient Greeks. The animal spirits are regarded by him as the essence upon which rest imagination, memory, judgment, sensation and movement; and to derange-

ments in the animal spirits are due affections of the nervous system, such as vertigo, apoplexy, convulsions, mania, etc. Descartes, notwithstanding his profound studies in anatomy, was so dominated by philosophy, that he was forced to find a common sensorium, and he finally hit upon the pineal gland as its seat. However, Descartes was not the first to regard this so-called gland as the seat of the soul, for others had enunciated this idea before him, and he was not without those who opposed this localization and that most effectually.

Of modern investigators, Thomas Willis (1621-1675) is one of the most remarkable, and he was the first, perhaps, to definitely regard the cortex of the brain as the seat of the mind; but by him were continued the theories of Descartes in the sense that he conceived that the distillation of animal spirits took place in the cortex instead of in the pineal gland. In him Hughlings Jackson had his precursor; for Willis attributed great elasticity and explosiveness to the animal spirits, comparing them to powder in a cannon. For him, the animal spirits, after distillation in the cortex, were distributed to the muscles by the nerves; and he attributed the spasmodic action which results in convulsions to explosion of spirits. After all, the theory of a nervous discharge and that of explosiveness of animal spirits are practically the same: the names only are changed. Willis' understanding of hysteria was as good, perhaps even better, than that of some modern writers, for he says: "This affection is convulsive and depends principally upon alterations of the brain and nervous system. It is produced by explosions of animal spirits. The origin of this disease should be sought in affections of the brain, such as might be due to fear, sorrow or some other passion affecting especially the spirits of the brain. This convulsive spasmodic diathesis, hysteria, is a disease observed not only in women but also in men."

When Proschaska (1749-1820), abandoning ancient terminology, in 1784 substituted the term *vis nervosa* for animal spirits, at one stroke he placed the study of nervous phenomena upon a solid foundation. While this was apparently merely the substitution of one name for another, in reality it was a radical departure which dethroned a philosophic dogma that had so long handicapped scientific thought: for instead of trying to explain the inexplicable, it gave a name to phenomena that belong to the nervous tissues by virtue of the fact that they have a distinctive structure. The *vis nervosa* became a name for that unknown something which we are logically forced to assume as the cause of phenomena that are manifestly the result of some form of force generated in and acting through the nervous system. Thus it became possible to study nervous activity in direct connection with the nervous system. From being an intermediary between the heart, blood, ventricular fluids, and animal spirits and the phenomena of life, the nervous system rose at one bound to the throne of vital supremacy. But if we owe to Proschaska this

epoch-making change of base, it must be said that he did not have an understanding of its universal application. If he emancipated himself from earlier dogma through his study and comprehension of reflex action, he still felt himself constrained to regard psychic force (*vis psychica*) as something apart and above *vis nervosa*. For Proschaska, the common sensorium was the central nervous system in general, but the nervous system itself was insufficient to engender intelligence.

About 1750 some observations made by Baader may be taken as the beginnings of modern cerebral localizations. From study of symptoms and cerebral lesions he concludes that, given a sufficient number of cases carefully studied clinically and at post-mortem, "We shall be able to know and predict what parts of the brain give sensibility and movement to this or that member: so that knowing the member affected we can determine what part of the brain is implicated; and inversely, given a distinct lesion of the brain, foretell what member must be affected." And after the study of some particular cases, Baader states that "perhaps we may conclude with certainty that the cerebral region beneath the parietal eminence controls the motility and sensibility of the upper extremity of the opposite side."

As we have seen, Soemmering did not render such service to knowledge of the relations of the mind and brain as he did to nervous anatomy; the same is true of those celebrated anatomists, Vieq d'Azyr (1748-1794), and Bichat (1771-1802).

In spite of the merited odium and ridicule into which the system of cerebral organology of Gall and Spurzheim has fallen, we should remember that knowledge of cerebral localizations owes more to Gall than to any one else. We cannot deny to Gall the signal merit of having by his surprising knowledge of cerebral anatomy and his erection of a false system, excited that interest in the study of the brain that has brought about such fruitful results in the last forty years. Bastian remarks that "nothing was known to them (Gall and Spurzheim) as to the real physiologic distinction existing between the gray and white substance of the cerebrum. The gray matter was by the founder of phrenology considered to have no proper nerve functions at all." This statement needs refutation, for it is erroneous. Gall says expressly: "All nerves take their origin in the gray substance; in passing through it (the gray substance) they become intimately connected with it, and are reinforced by fibres from it." The ganglia and the gray matter in general were for Gall the trophic centers of nerves. Malphigi had a similar idea, but Gall went further and regarded the convolutions and the gray matter as the veritable seat or "organs of the intellectual faculties." "The convolutions must be recognized as the parts where the instincts, sentiments, inclinations, talents, the affective qualities in general, and moral and intellectual forces, have their places of activity." This is practically a general statement of what is maintained to-day. If Gall went

too far in theory, he certainly had very distinguished predecessors. Gall reached the conclusion that the superior intelligence of man depended on the predominance in development of the frontal lobes of the brain; and this is the current doctrine both popularly and scientifically. Ferrier, Wundt and Hitzig, to mention no others, regard the frontal lobes as the seat of understanding, attention, will; in other words, as the common sensorium. There are noted alienists in France who still speak of individuals as predominatingly occipitals, parietals, or frontals, meaning by these terms that sentiment, activity, or intelligence predominates in the character and is correlated to predominating development of a part of the brain. We must not wonder at Gall, when to-day we see Magnan defending his division of hereditary degenerates into spinals, spinal-posterior-cerebrals, anterior-cerebrals, etc. It is Gall out-Galled. I have in my possession the hemisphere of a hardened brain, kindly presented to me by the late Professor Luys in 1889, which displays a disproportionate prominence of the paracentral lobule. He informed me that during life the patient from whom it was taken had been extremely and persistently hallucinated, in what sense I do not now recall; and he impressed upon me by means of many other brains showing a similar peculiarity, that he was convinced that hallucination depended upon hypertrophy of the paracentral lobule.

Flourens, who said it seemed he had never seen a brain before when he saw Gall dissect one for the first time, localized the mental functions in the cortex: but, as is well known, he made all parts of the cerebral surface of equal and interchangeable importance. Theoretical cerebral localizations were the object of Gall's system; unity of function, that of Flourens' theory. We find adherents of one or the other of these theories in those of illustrious names throughout the nineteenth century—Magendie, Burdach, Legallois, Serres, Foville, Richrand, Desmoulins, Andral, Lelut, Bouillaud, Baillarger, etc.

The man to whom most credit is due, as having definitely established the cerebral cortex as the true seat and source of mentality, is Parchappe, the professor of Rouen, who stands alone in the middle of the nineteenth century as the true precursor of our ideas of today. It was by his study of general paralysis of the insane that he demonstrated his thesis beyond all doubt. For him all the mental functions had their seat in the cortex of the brain. He observed, in relation to mental disintegration in general paralysis, that: "Intelligence is more readily affected than either will or sensibility; and the will in its motor aspect, more readily than sensibility. The understanding and the faculty of thought are lost before the faculty of movement, and especially before the faculty of feeling. In general paralysis at its extreme stage, the lesion of intelligence is more profound than that of movement, and the common lesion of intelligence and movement is more profound than the lesion of sensibility; the latter is only abolished with voluntary move-

ment when the whole thickness of the cortex is disorganized." Parchappe regarded the cortex as the common seat of intelligence, will, and sensibility, just as we now regard the central convolutions as the seat of general bodily sensation and motor innervation.

Vulpian, of controversial temperament, which he seems to have communicated to some of his pupils, sought to detract from the imperishable distinction of Broca, in his effort to show that Bouillaud had preceded him in his location of the motor center of language. Bouillaud's conception of the seat of language as lying in the frontal lobes was but a modification of Gall's location of speech.

With Broca's immortal discovery (1861) of the motor center of language in the third left frontal convolution of the brain, the doctrine of cerebral localizations was impreguably established. But for its rapid enlargement the results of experimentation were needed, and it was not until 1870, when Fritsch and Hitzig demonstrated the excitability of the cerebral cortex to electrical stimuli, that the modern era of knowledge of the brain began; their experiments dissipated forever the ancient dogma of the inertness of the brain to mechanical stimulation, and opened the way to an army of investigators that now toil patiently onward toward complete elucidation of cerebral physiology.

How did Fritsch and Hitzig come to discover what all previous observers had failed to find? The brains of living lower animals were commonly used for experimentation. For this purpose it was necessary to remove the vault of the cranium. In so doing, however, only the anterior portion of the skull-cap was removed with consequent exposure of only the frontal lobes of the brain, which in truth are insensitive to electrical and mechanical stimulation. Fritsch and Hitzig took the precaution to remove the *entire* skull-cap of the dogs experimented on, and thus at last exposed the areas of the brain in which the motor centers lie—areas that occupy a position well back in the brain of the dog.

Let us review the lot of the common sensorium—the place where the soul or ego is supposed to come into relation with the nervous mechanism. Aristotle placed it in the heart; the scholastics thought it to be in the cavities of the brain; Descartes, owing to false anatomic reasoning, found no place suitable but the pineal gland; Willis placed it in the corpus callosum (the great mass of nerve-fibres connecting the two hemispheres of the brain); Haller and Proschaska selected the inner mass of the white substance of the brain; Vieussens chose the striate body which lies near the base of the cerebrum; Bartholin decided that a small point in the fourth ventricle, known as the calamus scriptorius, should have the honor; Kant, with some difficulty, allowed Soemmering to prove it to be in the fluid of the ventricles; Gall induced his successors and many of our contemporaries to establish its seat in the frontal lobes. Thus the common sensorium has had such a varied material existence, since it was deemed necessary to find for it a material abiding

place, that we may well ask whether in reality there be such a thing as a common sensorium.

The theory of Paul Flechsig was first enunciated in an address given in the church of the University of Leipzig, October 31, 1894, when he became rector of the University. The essence of it lies in the hypothesis that the mind depends upon the development of numerous centers in the brain cortex which are in direct nervous connection with related bodily sense organs; that between these numerous cortical centers are established an infinite number of nervous connections which serve to associate them in their activities—to correlate and co-ordinate them. The systems of fibres that connect cortical nerve centers and bodily sense organs are called the projection system; those that connect nerve centers among themselves are called the association system, and in the association system he believes he has proved that there are at least two, and possibly three, great *centers* of association which he regards as being above or functionally superior to the centers of projection. He expressly denies the supposed supremacy of the association center of the frontal lobe, and believes that the association centers in the parietal and occipital lobes are of much greater importance for the development and expression of the higher manifestations of mind. According to this theory mentality is regarded as the result of the inter-action of center upon center or centers, and thus the search for the illusive common sensorium becomes unnecessary.

As a justification or illustration of this theory, which, I should add, has not escaped adverse criticism at the hands of such men as Hitzig and Dejerine, permit me to explain briefly what is called the cortical zone of language, and to point out the results that follow, as far as thought and speech are concerned, when the functions of this zone are interfered with or suspended in part or as a whole.

For the normal development of the faculty of speech, with its highest expression in written language, three brain centers are necessary; viz., a center to direct and control the organs of articulation in their movements (a motor center), a center for the registration and retention of articulate sounds (words) as they are heard (an auditory center of language), and, last, a center for the visual recognition of written signs that stand for the word heard. In right-handed persons, who make up about 98 per cent. of all humanity, these three centers lie in the cortex of the left hemisphere of the brain. They are demonstrably intimately interconnected, and, as I have indicated, constitute what has been called the zone of language. These centers are higher differentiations of motor and sensory centers, and are practically independent of the general centers to which they are related.

The acquisition of speech begins in the immitation of sounds heard, and, once developed, the auditory center for language ever afterward exercises a guiding and controlling influence over the motor center for

speech. The power to express oneself in written language is the direct offshoot, in an evolutionary sense, of the visual center for language, but it is not yet proved to have a definite center in the cortex.

We think in words, even when we give no outward expression in language of what is passing in the mind; in other words, we may distinguish what might be called *internal language* from language that is given expression in movement and sound.

Let us see what happens to internal language when injury or disease affects the zone of language.

A person whose organs of articulation are paralyzed thinks as well as ever and understands as before, but is forced to find some other avenue than that of articulate language to render his internal language objective, as by writing, etc. If a person becomes blind or deaf, if the zone of language be intact, internal language is not altered.

If the motor center of speech be destroyed, our patient can no longer express himself in words, though the organs of articulation be in a normal condition, notwithstanding the fact that he may understand what is said. If the auditory center of speech be alone implicated, the patient hears as before, but has lost all power to understand spoken words; and, further, he is no longer able to express himself in spoken language, because the natural guiding power of the auditory center is no longer present to aid the motor center, and what the patient says becomes incomprehensible jargon.

In a case in which the visual center of language is destroyed, the patient may see, but he has lost the power to understand written language. In educated persons there is also disturbance of the other related aspects of language, because of the intimate relation established between all three centers.

Destruction of the subcortical association-paths of these three centers also give rise to profound disturbances of speech.

Thus, in all these possible cases, the results outwardly are but the expression of the inner interruption of the reciprocal play of nervous energy between the centers; and internal thought may be so far arrested that the individual is devoid of the higher manifestations of mind.

This very schematic review of the affects of lesions of the zone of language, for offering which, to those familiar with the subject, I make apology, is but an example of lower associations, over which Flechsig places his three higher association-centers, which he calls the organs of thought.

I must apologize for having entered on controversial ground while treating of an historical subject.

In conclusion, permit me to quote, in free translation, the final paragraph of Paul Flechsig's celebrated address:⁵ "But consideration of mental phenomena, from the mechanical standpoint, has much more than an immediate practical goal; now, as ever, one of the noblest sides of

our being, which lies in the impulse to the acquisition of knowledge that belongs to the mental centers of the brain of mankind, is incorporated in the longing to bring the domain of the mind into the natural order of things: and thus the actual progress of knowledge in this direction, with the compelling necessity of a natural law, leads ultimately only to an ideal conception of the universe. The more the immense entirety of knowledge embodied in mind-endowed creation, is unveiled to us, the more do we feel that behind this world of appearance mighty forces are at work, to which human knowledge would scarcely venture to assert its likeness."

REFERENCES.

1. Soury, *Système Nerveux Central*, Paris, 1899, to which work the writer is indebted for many of the quotations and references indicated in the text.
2. Pinel, *Traite Medico-Philosophique sur l'Alienation Mentale*, 2-ieme Edition, Paris, 1809.
3. Esquirol, *Maladies Mentales*, Vol. I, p. 113, Paris, 1838.
4. *The Brain as an Organ of Mind*, pp. 515-518.
5. Flechsig, *Gehirn und Seele*, Leipsie, 1896.

CHOLECYSTITIS.

By J. L. WIGGINS, M. D., East St. Louis, Illinois.

LATE PROFESSOR OF ANATOMY, ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS.

The period is not long past when an operator searching for calculi in gall-bladder or ducts and finding none, was forced to conclude that an error in diagnosis, resulting in an unnecessary operation, stood as an indictment against his skill in interpreting symptoms. In most instances a lame excuse or half apology preceded the retracing of his steps as he endeavored to repair the seeming damage. Later the thinking, more daring operators, drained gall-bladders presenting like characteristics with such evident satisfaction that they searched for former cases which had been explored only and drained them.

To these errors and correction of errors we owe our present understanding of cholecystitis, and while we are free to admit that the problem is not satisfactorily solved, yet the conditions are so clear by comparison that we deem it a matter of congratulation, and confidently look forward to more light.

The cases of cholecystitis which at present attract our attention, are those which on account of their explosive symptoms call attention to the gall-bladder region. These are classified according to previous conditions as primary and secondary. The first embraces those in which there exists no suspicion of previous involvement, consequently they are free from calculi. The second embraces those cases which, because of local or reflex symptoms, we are reasonably sure are complicated by cholelithiasis. So far as the treatment, or results without interference

are concerned, there exists no difference; we have various pathological sequelæ in each case in proportion to the virulence of the infection, or degree of occlusion maintained in cystic or common ducts. If confined to the gall-bladder alone, we may expect either hydrops or pycholecystitis with secondary involvement of neighboring organs, and local peritonitis. It may rupture into some hollow abdominal viscus, into lung or free abdominal cavity.

It is of marked interest to follow the conditions favoring the development of two distinct types so apparently similar.

According to our present knowledge infection is a necessary factor in all diseases affecting the gall-bladder and ducts; in most cases, though so charged, it is not the initial cause. Experiments have demonstrated that even with a virulent infection, if the bile current is not slowed the infection is swept into the intestines and becomes harmless. Doubtless many infections of gall-bladder and ducts are aborted, the existence of calculi is an indication giving plausibility to this theory. Experiment, as well as clinical history, emphasizes the fact that attenuation of infection is a requisite for calculi formation. We are forced to admit that there is no method by which we can gauge the virulence of an initial involvement except by its local or constitutional effect, and while this may be of the most dangerous and acute variety, it does not necessarily prove that the virulence of the infection is excessive, but that local or general conditions favor the retention of infected material within circumscribed limits. In further support of this theory we may call attention to cases of typhoid fever; it is reasonably certain that a large percentage of so-called relapses, usually charged to errors or excesses in diet, are cholecystitis. Many of our cases of intestinal perforation, under like conditions will be found to be of gall-bladder origin. That this should be a favorable period for gall-bladder invasion is explained when considered in connection with previously proven facts; first, that a slowed bile current is a requisite for ascending infection, and, second, that a slowed current depends upon mechanical interference, muscular atrophy or enervation. These last two conditions are conceded to prevail in typhoid fever to a greater extent than in any other of our acute diseases; their influence being general, we may assume that the gall-bladder and ducts form no exception to this involvement.

Another link in the chain of cause and effect is the known influence of digestion upon hepatic secretion, and the storing of bile in the gall bladder during digestion, thus flushing the bile channels at nearly regular intervals, mechanically sweeping into the intestines ascending micro-organisms. The restriction of diet, during this disease, to small quantities of easily digested or pre-digested foods, which are absorbed in the stomach, or, if not, require but little aid through glandular secretion, removes another safeguard to infection.

Secondary cholecystitis, or that variety usually associated with chol-

elithiasis, is the type with which we are most familiar, on account of its greater frequency. In this form the presence of calculi in the sac whose lining membrane is impaired by previous microbic action, the stones acting as irritants, obstructing cystic or common ducts, is a condition ideal for results.

In considering this subject, we have touched only upon the explosive type of this disease, which is fairly well understood by those who have done exploratory work in the right upper quadrant. The field of future investigation lies further back, and embraces what we may at present consider as "deaf and dumb" cholecystitis. Of this latter type nothing at present is known. That its invasion is not accompanied by marked local or constitutional symptoms is evident, otherwise lithiasis would be defeated, and clinical history furnish some data. That indisposition accompanies this invasion there can be no doubt, and the question naturally intrudes as to whether, could it be recognized at this period, would it not be wholly amenable to medical treatment?

What are its symptoms? Is it referred to the digestive organs as a mild functional disorder, or may it consist only of malaise, chargeable in equal justice to malaria or la grippe? At what age may we ordinarily expect it? Our present knowledge, gauged by the usual period of lithic awakening, gives no definite idea: it may be seven or seventeen years.

The etiological factors, diagnosis and treatment, have been so fully covered by essayists during the past few years that it would be a waste of time to reiterate facts which are common property.

Exceptions to rules and departures from the ordinary course are not less peculiar to this disease than to others with which we have had a longer and more intimate acquaintance. The close association with neighboring organs favors mystifying reflexes which are calculated to deceive the most careful diagnostician. We need not look forward to the elimination of exploratory incision in these cases; on the contrary, as the value and safety of this simple procedure are recognized by profession and laity, it will be suggested by physicians and sought by patients.

The question is often asked, what influence is exerted by heredity? If none, why are certain families exempt, while others present a line covering several generations? Our old theories of humeral excesses or deficiencies, as influences in this direction are discredited as we recognize the natural and easy access through a possible patulous choledochus, a source of contamination connecting directly with point contaminated. We are familiar with the effect of heredity in transmitting deformities, such as syndactylism, which may mark entire families, may not congenital malformations in common duct at point of entrance into duodenum, favor free entrance of micro-organisms. The following family history would indicate such conclusions: Mr. H., gall-stone colic for many

years, died during attack at age of sixty-five years. Mrs. G. (daughter) had frequent attacks until married at age of twenty-two. They then ceased. Died suddenly at age of forty-two. Cause unknown. Had thirteen children, three died in infancy; of the ten living, oldest forty-one, youngest eighteen. Only one, aged twenty-five, is known to have escaped. The history in all is similar, differing only in degree or period of invasion. In one, attacks began in infancy, recurred frequently with present subjective symptoms of calculi in common duct. In all the others attacks began in childhood, and in two instances ceased after pregnancy. In one case malignancy is confirmed, in two others chronic invalidism exists; all have refused operative interference.

ACUTE APPENDICITIS.*

BY J. M. GRANT, M. D., St. Louis.

Appendicitis is no respecter of persons. It will attack as quickly the occupants of the frescoed palaces of the rich as it does the occupants of the lowly huts of the poor. King Edward is compelled to yield as promptly to the surgeon's knife as does the meanest subject in his realm. It is only during the past sixteen or eighteen years that the medical profession has begun to understand this disease. There is still much to be learned. One of the gentlemen present asked me why I wanted to write on an old subject like appendicitis. Did I hope to say anything new? No, I only wish to write of the disease as I have found it. In my private practice I have treated from incipieney to termination 110 cases of acute appendicitis. I merely wish to make known the result of observations made in these cases. Before doing that will say something about the disease.

Appendicitis is due to bacterial infection, but there is no certain micro-organism that produces it. Pus cocci and *bacterium coli* are most frequently found, but these bacteria are found in the normal appendix, so that there must be an exciting cause. Any interference with the circulation of the appendix, any pressure from within or without, may be an exciting cause. Any swelling of the mucous membrane at Gerlach's valve may obstruct the secretion and cause trouble. A mass of feces is sometimes found, causing an obstruction, foreign bodies, such as seed, pins, pieces of tapeworm, may be an exciting cause. The laity generally attribute appendicitis entirely to foreign bodies engaging in the appendix. There are many people who avoid swallowing seeds as much as they do poison. Indiscreet eating, alcoholic excesses, exposure to sudden extremes of temperature, grip and traumatism may transform a latent appendicitis into an acute attack. Acute appendicitis varies

*Read before St. Louis Surgical Club, February 8, 1905.

from a slight inflammation to a gangrenous condition. One attack predisposes to a certain extent another attack.

Any ulceration that exists causes cicatrices that narrow the lumen of the canal, and may at any time obstruct the secretion. Adhesions that have taken place may cause kinking of the appendix, and consequently obstruction and renewed inflammation. It is possible after violent or repeated inflammation for permanent recovery to occur by cicatrization of the ulcer of the mucous membrane and obliteration of the lumen. Perforative appendicitis is favored by ulceration of the mucous membrane. Fecal concretions are supposed in many cases to cause the perforation. The thrombosis of vessels with the destruction of tissue is generally ascribed to the virulence of the bacteria. The mucous membrane may ulcerate largely and still the appendix not be perforated. In appendicitis there is always a certain amount of peritonitis. An exudate may be thrown out, a pronounced inflammatory thickening take place and a matting together of the small intestines occur, and still a speedy recovery follow. A certain amount of pus may form and be absorbed, it more frequently ruptures into the small intestines, rectum, gall bladder, uterus or urinary bladder. As pus forms and the pressure increases it attempts to escape at the point of least resistance.

It breaks down existing adhesions and may work up behind the kidney through the diaphragm into the lung and escape by coughing. It often occurs that adhesions do not form fast enough and the pus escapes into the general peritoneal cavity, causing septic peritonitis and death. In some cases of appendicitis the inflammation is so violent from the start that the appendix become gangrenous at once and a general peritonitis develops immediately.

Appendicitis develops most frequently in the young. Between the ages of ten and thirty years is the favored time. The decade between thirty and forty finds the cases much fewer. From forty to fifty safety is still more assured, and after the age of sixty has been reached an attack of appendicitis is very rare. In fact, at that age one half of the appendices are found to be nothing but strings of connective tissue. After maturity of the individual a change takes place in the mucous membrane of the appendix. An atrophy of the mucous membrane occurs and there is a tendency to agglutination of the walls and hence obliteration of the lumen.

Inflammation of the appendix is much less frequent in the female than in the male. This is, to a certain extent, due to the much better blood supply in the former. In the male the blood supply is from branches of the superior mesenteric artery, while in the female there is also blood supply through the appendicular ovarian ligament. With the better blood supply the chances of bacterial infection is diminished.

The usual symptoms of acute appendicitis are well known. In most cases of the disease, after twenty-four or forty-eight hours, the diagnosis

is comparatively easy. But an immediate diagnosis is of the utmost importance, so as to give the patient the benefit of an early operation when deemed advisable. Acute indigestion, ptomain poisoning, bilious colic, renal colic and acute obstruction of the bowels and intussusception often simulate appendicitis.

In making the differential diagnosis, the age of the patient and the history of the case are of the utmost importance. Intussusception is as a rule found in the very young. Acute obstruction, not due to hernia, is generally found in people past fifty. Biliary colic occurs most frequently in the female and at an age when appendicitis is not expected. The history of dietetic indiscretion is generally found in acute indigestion also in ptomain poisoning. In some cases the diagnosis is very difficult.

Appendicitis is a surgical disease but does not necessarily require operative treatment. In mild attacks, rest in bed, hot or cold applications, preferably the ice bag, and a little morphine to relieve the pain, can be cautiously administered. Morphine, in my opinion is of great value in many cases, but it masks the symptoms and consequently is sometimes very harmful. These mild cases generally recover in a week or two, but there is always a possibility of a sudden leakage producing disastrous results.

In another class of cases a thickening appears almost immediately over the appendix. If the fever persists, and the pulse ranges over 100 and is of poor volume, an abscess is probably forming, and the patient should be operated on as soon as possible. The class in which the attack is ushered in with great violence, vomiting, intense pain, rigors and immediate distension, should, in my opinion, be operated on immediately.

The appendix should, in all cases operated on, be removed, if possible to do so without increasing the danger too much. By simply opening the abscess without removing the appendix, you leave the patient still liable to an attack.

About sixteen years ago, after a personal experience with some appendix trouble, I decided to follow the conservative treatment. My determination was reinforced at that time by an authority whom I cannot recall, who claimed that 95 per cent. of all cases of appendicitis would recover without operation, and that of the remaining 5 per cent. about 3 per cent. would develop abscesses that could be operated upon with ease and that only 2 per cent. would die. I followed that course for a number of years and wish to report the result to you. Out of 110 cases of acute appendicitis there were five deaths. Forty cases had distinct thickening about the appendix, that finally disappeared, the patients recovering entirely. As a fair example of these cases I will report one.

J. B., aged ten years, was taken with a chill, cramping, vomiting. I was called twelve hours after attack and found temperature of 103, tenderness over entire abdomen, slightly more pronounced in region of

appendix. Next day temperature 102.6, pulse 118, distension of abdomen, tension of muscles in right iliac fossa and thickening could be felt in that region. The third day inflammatory mass could be felt; temperature 101.8, pulse 110. The fever persisted for eight days and all thickening did not disappear for sixteen days. In three weeks the boy was sitting up. That was three years ago. There has been no recurrence.

Thirty cases were of milder attacks, did not always have chill, all had considerable pain, which after twenty-four to forty-eight hours were marked in region of appendix. I will report one of these cases.

S. P., male, age thirty-two, sent for me in July, 1897. He was taken sick at his place of business twenty-four hours before. The attack began with nausea, pain and uncertain feeling in abdomen, no chill, but felt feverish. Thought he had acute indigestion, superinduced by eating late at night. My examination showed distinct tenderness upon slight pressure below McBurney's point. Deep inspiration caused pain in that region. Temperature was 101, pulse 106. The next day temperature was 101, pulse 90, and a slight thickening could be felt. Had no fever after fourth day, tenderness gradually disappeared and in a week patient was able to sit up. Two weeks afterward there was a slight recurrence of the trouble, and patient was kept in bed for one week. Since then he has had no attacks.

The rest of my cases varied very much in the intensity of the trouble. Out of all the cases only ten were females, only one was over sixty-five years of age, two were between forty-five and fifty, fifteen were between thirty and forty, and the rest were under thirty. The youngest was six years. Five cases developed abscesses, and were operated upon.

J. F., letter carrier, age thirty, married, came into my office early in May, 1896, had been taken sick an hour before. Complained of intense pain in right hip; could not stand erect: the pain shooting down the thigh at times. Examination showed some tenderness upon pressure in right iliac region; no special tenderness over thigh or hip. In recumbent position he kept the right thigh flexed. Temperature was 102, and pulse 110. Patient was sent home and to bed. Hot applications were applied, and owing to the intensity of the pain codeine in one-half-grain doses was administered. He suffered intensely for six days, keeping the thigh flexed all the time, and temperature was never below 102, pulse ranging from 108 to 120. The pain gradually passed from the thigh into the back. There was marked dullness on percussion in right iliac region. There was no change in contour on front of abdomen, but a slight fullness could be noticed in back over crest of ilium. There was no question but that the trouble started in the appendix, yet nearly all the symptoms pointed to the hip and back. I operated on the patient on eighth day at point mentioned over crest of ilium, and over a pint of foul pus was removed. The pain ceased immediately. A

drain was left in for sixteen days, and the patient made an uninterrupted recovery. Has had no sickness since.

I was called to see H. M., male, age twenty in October, 1898. He had been suffering about eight hours with violent abdominal pains and vomiting. Examination showed abdomen distended and general tenderness over it. Patient would have paroxysms of terrible pain; he would scream in agony, and great drops of sweat would break out on body. Administered one-half grain of morphine hypodermically. His temperature was 100, pulse 118. Saw patient again in four hours, and found him quiet, but tenderness more marked over McB.'s point. As soon as the effect of the morphine was gone the horrible pain returned, but was referred to the region of the appendix. Ice bags were applied and hypodermic of morphine used when absolutely necessary. There was great distention of abdomen and pronounced tenderness over region of appendix. After forty-eight hours patient was removed to hospital and prepared for instant operation. An abscess was found under calcum. Patient made a speedy recovery.

J. B., age twenty, male, student, sent for me in February, 1899. Gave a history of having had four attacks of appendicitis. One of them, a slight one, I had treated him for two years prior. He had been sick twenty-four hours with nausea and pain in region of appendix. Temperature was 102, pulse 100. There was tension of muscles in right iliac region and marked tenderness. In twenty-four hours a distinct thickening could be felt. Hot bichloride poultices were applied. Crede's ointment was used. The thickening rapidly extended over the lower part of abdomen. On seventh day Dr. Tuholske was called in consultation, and the treatment was continued for three days. The patient was then operated on, and a large quantity of pus evacuated. A drain was inserted, and left for three weeks. The wound healed nicely, and patient was discharged. Four days afterwards I was called, and found patient suffering, and had a temperature of 103°. Thickening could be felt in the iliac region. This increased for five days, when an incision was made in the same point, and a quantity of pus escaped. Tube was reinserted, and left in for two weeks. It was at least three weeks before all the thickening disappeared. Patient has not had any more trouble.

S. P., age sixty-five, broker. Was seen by me in 1900. For three days had been suffering with occasional paroxysms of abdominal pain. Had vomited twice, and had felt feverish. Examination showed tenderness in region of appendix, and some thickening was present. Gave history of prior attack. For eight days slight pain continued, and thickening gradually increased. Temperature was never over 100, and pulse remained about 100. The right thigh was kept flexed. On the ninth day he was removed to the hospital and prepared for operation. An incision was made over swelling, and about a teacup of pus escaped.

The general peritoneal cavity was not opened. A drain was left in for three weeks. The fourth week the patient was about well, and was removed home. There was a slight wound not healed. Six days afterwards I was sent for, and found the patient had developed erysipelas. It spread rapidly all over the body, and the patient died from it on the fifth day.

The fifth patient operated on was my brother-in-law, G. M. In May 1902, I was called, and found him suffering from abdominal pains, most pronounced in regions of umbilicus. Eighteen years prior to that he had had an attack of serious illness which was probably appendicitis. This pain persisted for twenty-four hours, and then shifted to the right iliac region. The right thigh could not be distended without discomfort. A slight thickening could be felt in region of appendix. Pulse was 100, and temperature 99.6. The next day the symptoms were more pronounced, and Dr. Tuholske was called in consultation. I was greatly alarmed, owing to the fact that his son, my nephew, had died two years before of appendicitis. Dr. Tuholske advised operating, but preferred to wait a little. Ice bags were used. On the fifth day the pain became much worse and thickening more pronounced. Dr. Tuholske operated, and found an abscess situated behind the cæum. A drain was inserted, and patient made a speedy and perfect recovery.

I now wish to report the cases that died under my care.

H. C., male, aged eighteen years, was taken violently ill in July, 1900. Saw him eight hours after attack began. His pulse was 120, temperature 98. Had marked abdominal distention and great tenderness over abdomen. Vomiting was frequent, hot pack and stove were applied to abdomen. One-eighth grain morphine administered hypodermically and given hot water to drink. In twelve hours tenderness was more marked over appendix region and patient was growing rapidly worse. Operation was urged, but family would not consent unless I would assure them the boy would recover. In this case there was never any elevation of temperature, pulse never below 120. Patient died within forty-eight hours from time I saw him of septic peritonitis. I had treated the family for nine years, knew it was the boy's first attack.

My nephew, G. M., aged twelve years, was taken sick July 6, 1900. I saw him a few hours after first complaint. He had pains in umbilical region, there was no distention of abdomen and no marked tenderness. Temperature was 100 and pulse 90. Patient was placed in bed, saline cathartic given and ice bag applied. The next day there was more tenderness over the appendix, and rectal examination revealed tenderness and some thickening in that region. Pulse 86 and temperature 99. On the third day Dr. Tupper was called in consultation and agreed that operation was inadvisable then, but favored it after recovery. For eight days patient suffered but little, ice bag controlled pain and no marked thickening developed. On the ninth day patient went into collapse and

died in six hours. I never for one moment had expected such a termination. Patient was apparently improving and was begging to be allowed to sit up. My views on conservative treatment were being revised.

Was called to see J. H., male, aged ten, on the day my nephew was buried. He had been sick for twenty-four hours with what his mother called biliousness. He was suffering great abdominal pain, vomiting frequently and had marked abdominal distension. Tenderness was marked near appendix. I advised immediate operation, parents insisted on delay; however, the next morning consented to operation, but boy had grown rapidly worse and I refused to operate. He died forty-eight hours after I first saw him of septic peritonitis. It was his first attack.

I. M., female, aged eight years was taken ill in May, 1904. I saw her twelve hours after attack began. She was vomiting and suffering excruciating abdominal pains. Abdomen was much distended and tenderness was marked over appendix, and right thigh was flexed. Pulse 120 and temperature 103. Facial expression was bad. I urged immediate operation, but parents refused. Would not even allow her to be removed to hospital. I had attended the girl's brother one year before for violent appendicitis. I had urged operation in his case but parents refused and the boy made a good recovery. This doubtless influenced their decision in the little girl's case. However, she grew rapidly worse and died within fifty-six hours from the time I saw her. It was her first attack.

Mrs. F., female, aged nineteen years, was taken violently sick in October, 1902. She had similar appendix symptoms. Was at once removed to hospital and prepared for operation. She insisted on waiting for arrival of a relative and died within forty-eight hours without operation.

These five patients all died in their first attack. Four were very violent from the beginning and death occurred in each case in less than four days. One was apparently not severe and the patient had every appearance of recovery, but was taken violently worse on the ninth day and died. I saw some patients apparently as violently ill as any of these, yet they made good recoveries without operation. I will cite as an illustration the case of C. R., plumber, aged twenty-eight. I was called hurriedly at night to see him in December, 1903. As I rang the door bell could hear him screaming with pain. He had been taken sick an hour before and was rolling on the floor in agony when I reached him; he was practically in collapse and it was not possible to make any satisfactory examination. He was given one-third of a grain morphine hypodermically, and the dose was repeated in twenty-five minutes as patient was no better. Abdominal muscles were as rigid as bar of iron. My diagnosis was perforating appendicitis. Family were willing for operation, but the next morning patient was better and changed his mind. There was abdominal distention and great tenderness over appendix.

Thickening developed in that region, but the patient was entirely well in ten days.

In all of my cases a saline cathartic was given the first day, and in most of the cases ice bag gave most relief of all local applications. I have been able to keep track of about 75 per cent. of these cases. The rest have drifted away. Eight of them have had recurrent attacks to my knowledge, and two have been operated on in the interim and made good recoveries. I want to emphasize certain things observed in these cases. All of the deaths occurred in the first attack and the patients were young, the oldest being nineteen. Four of the cases operated on for abscess had prior attacks, three of them were over thirty years and one sixty-five. Only 10 per cent. were females and two of the deaths were of that sex. The temperature was no criterion to go by, the pulse being a better indication that abscess was developing. Some of the apparently most violent cases would recover without operation or abscess developing. Pronounced inflammatory thickening would disappear in two or three weeks.

After the third consecutive death in 1900 I abandoned the ultra conservative treatment and thought that many cases should be operated on at the very beginning of the attack, but the question that confronted me, as it does every surgeon, is which case should positively be operated on immediately; which should not be operated on until after the attack, and which cases should be let alone unless repeated attacks occurred. I hope that some gentleman in this surgical club will, by his pathological knowledge, diagnostic skill and surgical acumen, eventually solve the problem. If he does the laurel wreath of fame will crown his brow and his name will be a household word in the medical profession long after our bodies lie mouldering in the grave.

A SIMPLE HEAT METHOD OF STERILIZING AND STORING CATGUT—PRELIMINARY REPORT.*

By WILLARD BARTLETT, M. D., St. Louis, Missouri.

Although one year's work with catgut sterilized in the manner herein described has been eminently satisfactory, and although bacteriologic tests have proven the reliability of the process beyond doubt, still the desire to embody the experiences of other surgeons in my complete report on the subject prompts me to publish this preliminary article. The treatment of the raw cutgut is as follows:

1. The strands are cut into convenient lengths, say thirty inches, and made into little coils about as large as a silver quarter. These coils in any desired number are then strung like beads on to a thread so that the

* Read before the St. Louis Surgical Club.

whole quantity can be conveniently handled by simply grasping the thread.

2. The string of catgut coils is dried for one hour at a temperature of 180° F., and then for a second hour at 220° F., the change in temperature being gradually accomplished.

3. The catgut is placed in liquid albolene, where it is allowed to remain until perfectly "clear," in the sense that the term is used in the preparation of histological specimens. This is usually accomplished in a few hours, though it has been my custom to allow the gut to remain in the oil over night.

4. The vessel containing the oil is placed upon a sand bath and the temperature raised during one hour to 320° F., which temperature is maintained for a second hour.

5. By seizing the thread with a sterile forcep the catgut is lifted out of the oil and placed in a mixture of iodine crystals, one part in Columbian spirits (deodorized methyl alcohol), one hundred parts. In this fluid it is stored permanently, and is ready for use in twenty-four hours; the thread is then cut and withdrawn.

It seems to me important that the gut should be thoroughly "cleared" before the oil is heated, in order that we may thus be certain that the temperature of the center of the strand becomes as high as that of the oil outside. It may be noted further that I do not remove the oil from the gut before placing it in the storing solution. This is done purposely, since catgut which is perfectly free from oil is so very sensitive to the action of water that it readily untwists and becomes tangled after it is used in a wound but a few moments. This storing fluid simply takes off enough oil from the exterior of the strand so that it is not too slippery for use, and the albolene being a bland, non-irritating substance, there is no reason why it cannot be safely left in the gut. The iodine rapidly permeates the strand; the same will be found stained black after a few hours, and consequently the surgeon will have the assurance that he is introducing an antiseptic as well as a thoroughly sterile suture material.

Formerly I used the well-known alcohol-ether-iodoform mixture, which has been so useful in the hands of the Mayos, Ochsner, Moynihan and others, but its use necessitates that the catgut shall stand for a long time before it is ready for use, and chemical analysis has shown me that scarcely 1 per cent. of iodine is deposited in such catgut after it has stood a whole year.

Although I should be far from adopting a surgical procedure simply because it is economical, it will strike anyone that the chemicals here used are very cheap. The liquid albolene can be used repeatedly, and the iodine solution costs just one-fourth as much as the alcohol-ether-iodoform mixture.

As far as the tensile strength and pliability of the finished product are concerned, I may state that this leaves nothing to be desired. I have made a large number of breaking tests, and have found no other heat method to produce a stronger strand. Catgut treated in this way lasts in the tissues about as long as the same sized strand treated by most of the other methods in vogue at the present time, the No. 2 gut generally requiring about one week for its absorption. I have not found that the material so treated deteriorates at all with age, neither as far as strength or sterility is concerned. In fact, I have recently had a large number of strands bacteriologically examined from a jar which had been frequently opened during the past year, and have yet to find the first one infected or in any other way undesirable for use in surgery. The complete list of the bacteriological experiments and tests of tensile strength to which this catgut has been subjected will appear at a later date.

EDITORIAL COMMENT.

THE ST. LOUIS CHARITY HOSPITAL SYSTEM.

It is seldom indeed for the medical profession in a community to be moved as a whole by some definite purpose. So rare a phenomenon deserves and invites comment.

The system under which the city charitable medical institutions of St. Louis has been administered is so primitive and so antiquated that no one has found the courage to come to its support against the attacks which have lately been directed against its further continuance. The very obviousness of the system's inherent defectiveness and evil seems to have engendered a certain kind of passivity in the minds of the medical profession, as though a thing so devoid of the material for a just defense must be endured with patience until it dies of its own weakness. What has escaped notice heretofore, or at least escaped the notice of a large body of physicians, is simply this: A medical institution may, from the point of view of medicine, be a thing to blush at, a thing to avoid in conversation, yet be the stronger in the political life of a city just for that reason. Graft grows in places that are diverted from the purpose of their origin. The more the City Hospital decreased in efficiency as a medical institution for the care of the sick and for the education of physicians and students, and as a place where original study could be pursued, the more it became a valuable political asset.

The office of superintendent might easily be in the hands of a very capable man (as, on the whole, it has always been), yet, apart from this, nothing need be done to weaken its efficiency as an adjunct to some political machine. To make it of the greatest value to the health commissioner who happens to be in office, for he has the sole right of appointment, from the stretcher carrier to the assistant superintendent. From the moment of his taking office the superintendent ceases to be a factor in the reform of the system, for the very obvious reason that in the four years of his term he wishes to pursue, without interruption, his education in surgery. So the endless chain has gone along, each succeeding administration strengthening the precedent of bad conditions; and, let it be noted, that with each administration likewise has developed a steady increase in the efficiency of the hospital as a machine adjunct to whatever political party happened to be in power.

Yet medicine, as other callings which attract men of a certain type, contains always some few among its body in whom the spirit of reform and change is a moving force. Such men, to be effective, possess that small tincture of hope and optimism which must lie behind all successful efforts towards a change for the betterment of existing conditions. When the time is ripe and when the spirit is abroad, it is to them that

the power of massed effort turns for guidance, as unconsciously, perhaps, as is their own awakening at the proper opportunity. This then makes the psychological moment: and, if signs are not in error, that moment has come to St. Louis medicine, and it has sounded in no uncertain tones at the meeting of the City Hospital Alumni Society last Thursday. Given the proper time, the leading spirits, and the turning to the light of the great body of thinking men, then things are bound to happen. Before this *triumph*, selfish opposition falls to the ground. In the story of human achievement against the power of established wrong, these three elements are always seen. In our own community, small though it is in comparison to the world's larger experience, these same conditions are seen reflected in miniature. In this movement against the prostitution of medical charities for the purpose of selfish ambition and political profit, history will repeat the lesson it has so often taught. Institutions created and developed in error by the power of the people, can be changed by the use of that same power. To make of this movement a popular protest is the secret of its successful issue, and the medical profession of this city must face this fact—that they are a part of the community, and that to it the final appeal must be made.

DR. OSLER'S ADDRESS.

The publication in the last number of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of a full abstract of Dr. Osler's address, which has called forth so much newspaper discussion, will set at rest the absurd statements and interpretations made not only by mere newspaper reporters, but by medical men (prominent though they be) who consented to discuss without reasonable information upon the subject, such bald statements as the newspapers were pleased to bring them. Moreover, as the JOURNAL in its editorial says, "The whole affair has been a reflection on the managing editors of our newspapers," and, we would add, upon the medical men who have ventured to criticize without knowing a syllable of context.

Taking as our theme in his many-sided address, the desirability of a fixed time limit during which a professor may teach at our universities, Dr. Osler states that he has in this regard two fixed ideas which may best be presented in his own words: "The first is the comparative uselessness of men above forty years of age." "Take the sum of human achievement in action, in science, in art, in literature—subtract the work of the men above forty, and while we should miss great treasures, even priceless treasures, we would practically be where we are to-day." The effective, moving, vitalizing work of the world is done between the ages of twenty-five and forty years." . . . "In the science and art of medicine there has not been an advance of the first rank which has not been initiated by young, or comparatively young, men. Vesalius, Harvey,

Hunter, Bechat, Laennec, Virchow, Koch—the green years were yet on their heads when their epoch-making studies were made.”

“My second fixed idea is the uselessness of men above sixty years of age, and the incalculable benefit it would be in commercial, political, and in professional life if, as a matter of course, men stopped work at this age.” As it can be maintained that all the great advances have come from men under forty, so the history of the world shows that a very large proportion of the evils may be traced to sexagenarians—nearly all the great mistakes, politically and socially, all of the worst poems, most of the bad pictures, a majority of the bad novels, and not a few of the bad sermons and speeches. It is not to be denied that occasionally there is a sexagenarian whose mind, as Cicero remarks, stands out of reach of the body’s decay.” “The teacher’s life should have three periods—study until twenty-five, investigation until forty, profession until sixty, at which age I would have him retire on a double allowance. Whether Anthony Trollope’s suggestion of a college and chloroform should be carried out or not, I have become a little dubious, as my own time is getting so short.”

It will be seen that Dr. Osler simply argues from the historical standpoint, the impaired capabilities of men above forty, especially for original work of moment, though not denying that many men above that age may be more capable of achievement than some under forty, but that the achievements in all directions that have meant essential advance in the knowledge and abilities of the race have in the overwhelming number of instances been worked out by “young or comparatively young men.” Moreover, as may be gathered from one of the last quotations, the work of the individual man, which represents the bulk of his experience, is done before he is forty, and that the results and applications of this experience appear in the succeeding twenty years, which Dr. Osler designates as the period of “profession.” It is then, too, if at all, that his labors gain wider recognition. To quote once more: “To modify an old saying, a man is sane morally at thirty, rich mentally at forty, wise spiritually at fifty—if at all.”

The greatest misfortune, however, in the manner in which the newspaper discussion has arisen, is the fact that the allusions which have given rise to it, form only a small part of an exceptionally valuable address on the development and the ideals of medical education in America. Ignoring, probably incapable of appreciating, the spirit of the address, the newspapers have utilized their allusions as a sensational catchword, with a mendacity which too often characterizes other phases of their work requiring perception and delicacy. And be it said to our shame, reputable members of our profession have permitted themselves to fan the flame.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

Observations on the Blood Pressure in Disease.—MORRIS and EDMUNDS (*Medical News*, January 14, 1905).—The present tendency in medicine is to substitute methods of precision for methods of approximation. The greater the accuracy attained in studying the various phenomena of the human organism the better will be our insight into, not only physiological, but pathological manifestations. The writers review the history of the sphygmomanometer and its methods of application. They have accepted Gaertner's figures as to the normal blood pressure in an individual as approximately correct, from 100 to 130 m. m. Hg. The pathological condition which seems to affect arterial tension more than any other, is a diseased condition of the kidneys. Too few cases of acute nephritis have been reported to permit of definite conclusions on this subject. In chronic interstitial nephritis the universal clinical observations have been confirmed by the sphygmomanometer. Every one working on this subject have reported high pressure in this disease. To summarize the effect of renal disease on pulse tension, it may be said that an acute inflammation or degeneration may or may not raise the pressure, but that a chronic interstitial nephritis, practically without exception, causes an increase, which, if it terminates in uræmia, may give still higher readings. As the uræmic symptoms disappear the pressure becomes lower. Chronic parenchymatous nephritis probably does not cause elevation of pressure as a rule.

In chronic valvular diseases of the heart the findings have not been altogether uniform. It seems probable that considerable advance may be made in the study of this group of cases by the determination of diastolic as well as systolic pressure.

Next to nephritis there is probably no disease which excites greater interest in connection with observation of arterial tension than exophthalmic goitre. Increased arterial pressure has been found quite constantly. In the males examined the pressure averaged about 164 m. m.

In anæmia, whether primary or secondary, a majority of the work has shown that the pressure is lowered. In a series of eleven cases of pernicious anæmia, the writers have had three which showed a normal tension, the rest being subnormal.

One of the most important fields for blood pressure estimations, is, without doubt, in typhoid fever. If further work confirms the observation thus far made the changes of blood pressure will be a very great aid in making the diagnosis of perforation and other complications.

The role which arterio-sclerosis plays in the production of high arterial tension has probably been much exaggerated. The writers believe that the pressures found in arterio-sclerosis are influenced little by the con-

dition of the arterial wall, but rather are dependent upon, not only the heart but also accompanying conditions, possibly the result of disturbances of metabolism, which are as yet little understood. Testing the effect of certain drugs upon the arterial tension is another important field for the use of the sphygmomanometer. Much has already been done along this line.

The authors suggest a wider employment of the instrument, with the publication of results. It is only in this manner that the usefulness of the sphygmomanometer can be fully developed and appreciated.

Specific Agglutination of Streptococci from Scarletinal Angina and from Extra Buccal Primary Affections.—ROSSIWALL and SCHICK (*Wiener klinische Wochenschrift*, No. 1, 1905).—It is generally conceded that the port of entrance for the infection in scarlet fever is in most cases the tonsils, and that the angina in these cases is the primary affection. Occasionally, however, cases are met with in which the primary affection is extra buccal, for instance, in scarlet fever infections of wounds, of the puerperium, of burns, etc.

Streptococci taken from both of these classes of cases were tested as to their agglutination when treated with the Moser serum. This serum is obtained from horses immunized against streptococci obtained from the blood of individuals with scarlet fever. It was found that this serum not only influences the course of the disease, but has a specific agglutinating power on streptococci obtained from the blood of scarlet fever patients.

The authors satisfied themselves that the Moser serum had such an influence on streptococci obtained from cases with extra buccal primary affections, but not on those obtained from the tonsils. They conclude, therefore, that the streptococci in the deposit on tonsils in scarlet fever are not of one kind, but that they belong to different groups. Every streptococcus, therefore, found on the tonsils of scarlatinal affections is not to be brought into relationship with the affection.

Two Cases of Exophthalmus Bilateralis, and a Case of Chorea Cured by the Removal of Adenoid Vegetation.—HOLZ (*Berliner klinische Wochenschrift*, No. 4, 1905), after defining Basedow's disease, describes two cases which he interprets as such, in children of seven and nine, respectively. In the first case there was a marked degree of exophthalmus, accompanied by Graefe's and Sellwag's signs. Ten days after the removal of adenoids the bilateral exophthalmus had entirely disappeared. In the second case, the same conditions existed. The removal of hypertrophied tonsils had no effect whatever upon the eyes; but the removal of the existing adenoids caused the exophthalmus to disappear within fourteen days.

The author concludes therefore that there is a close relationship between bilateral exophthalmus and adenoid vegetations. He believes that exophthalmus when not due to mechanical causes, is in itself sufficient to permit of the diagnosis of Basedow's disease. He considers the disease in its different variations an intoxication of the central nervous system, due to abdominal internal secretions, and that it can be brought about by adenoid vegetations. The same is true of epilepsy and chorea.

When such is the case, these affections can be cured through the removal of the vegetations.

Concerning the Demonstrable Changes in the Heart, and Pericarditis Following Attacks of Angina Pectoris.—KERING (*Berliner klinische Wochenschrift*, No. 1, 1905), calls attention to the scarcity of references in the literature to the clinical findings which follow attacks of angina pectoris. These changes are of great significance, since they not only throw light upon the nature of the attack, and upon sudden deaths, but they also teach us how to care for one thus affected.

The author recognizes three groups of cases, based upon the physical findings. In the first group are included those cases in which an increased hypertrophy of the heart is found, together with a slight febrile condition. The fever is usually due to myocarditic changes.

In the second group belong those cases in which gross changes take place under the very eyes of the observer. These usually consist of dilatations of portions of the heart and are also accompanied by slight fever. He cites a case in which there occurred a dilatation of the left ventricle.

To the third group belong the cases in which an acute pericarditis follows immediately after the stenocardic attack. A series of cases of this group are reported here.

A fourth group might be added in which there are no demonstrable clinical changes at all, but in which the myocardium is involved. This is manifested by a temporary diminution of the urine, and the development of edema.

The author's observations leads him to the conclusion that patients who have had even slight attacks of angina pectoris should be kept in bed for days or weeks, as the occasion demands. He believes that in this manner a sudden termination may be prevented or deferred for a considerable time.

Endemic Occurrence of Myeloid Leukemia.—ARUSPERGER (*Munchener med. Wochenschrift*, No. 1, 1905), observed in his clinic three cases of typical myeloid leukemia within two years from the same neighborhood. This prompted him to investigate further to see if there were other cases in this community, and whether there was an etiological factor which could explain their existence. He discovered two other cases there, and succeeded in obtaining from physicians the histories of six others. He was unable, however, to find any definite cause for their existence. The conditions in and around Pforzheim and Muhlacker, where the cases occurred, were just about as they were in other small towns in Germany.

The Quinquaud Phenomenon.—LEVIONIK (*Wiener klinische Wochenschrift*, No. 51, 1904).—This symptom is elicited when the fingers of the patient are spread out and the finger tips are lightly laid upon the palm of the hand of the observer. If present, after a few seconds a rubbing, grinding or crackling sensation is experienced with greater or less intensity. Many authorities bring this symptom into relationship with alcoholism. The writer investigated the phenomenon in 112 men and 88 women, and found that this could not be considered an absolute rule.

He found it present in many abstainers and those who drink moderately. He considers it a sort of phalangeal crepitation in cases in which there exists a tremor of the hand. When the tremor is present in one hand only, the symptom is observed in that hand and not in the other.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

A Contribution to the Pathology of Basedow's Disease.—PAESSLER (*Mitteilungen aus der Grenzgebieten der Med. und Chirurg.*, Band 14, Heft 3).—This experimental article has for its subject the supposed direct toxic effect of the thyroid secretion upon the human organism. The author secured a goitre just after it had been removed from an exophthalmic case, the patient having been operated upon during an exacerbation of the trouble, consequently all conditions necessary to prove or disprove the poisonous qualities contained in the gland were fulfilled. He considers the pulse an accurate indication of the degree of disturbance present, hence he was very careful to note the pulse at different times, after injecting the above mentioned diseased thyroid substance into the carotid arteries of rabbits and dogs. To his great surprise he found that such injections produced absolutely no disturbance in the animal's pulse, although he will not thus attempt to disprove the thyroid theory in the disease. He merely proves that rabbits and dogs are not affected by the human thyroid substance. At any rate he considers himself safe in saying that the thyroid poison, whatever its nature may be, is not a simple direct action, such as we ascribe to the ptomaines.

A New Method of Performing Gastroenterostomy.—GOULD (*Boston Med. and Surgical Journal*, January 19, 1905).—After a large number of experiments upon animals the author comes to several conclusions which are directly intended for the human subject, and though a perusal of his article will convince anyone of the worth of his work, still it seems hardly possible to compare the results obtained upon animals with what may be expected from the human intestine. He does not close the pylorus, but does a supplementary enteroenterostomy and places the constriction in the proximal loop. His method of doing the gastroenterostomy differs from the posterior suture operation usually in vogue therein, that after making a longitudinal incision along the greater curvature of the stomach, he seizes two points at the middle of each lip of the same and uses these as the ends of the suture lines which connect the stomach with a longitudinal opening in the gut. The idea of all this is to prevent secondary closure of the opening. The operation has been done upon one human subject, but the convalescence is stated as having been so very slow that one is hardly prejudiced in favor of the procedure.

Ten Observations of Foreign Bodies in the Bladder, Stone Excepted.—CHEVALLIERE (*Bullet. et Mem. de la Soc. de Chirur. de Paris*, January 25, 1905).—To the large number of cases of this kind already upon record our author adds ten, of which a part are decidedly unusual. The first was a nozzle of a syringe which was introduced by mistake into the urethra of a woman and which slipped into the bladder. This was discovered by the introduction of the finger, there being a well grounded fear against cystoscopic examination, and the same was removed without trouble through the urethra. The second consisted of the tip of a bougie which slipped into the bladder of a woman during examination and was removed without difficulty by the forceps. The third was an object of the same kind removed in the same way. The fourth was a rubber tube which was removed by the natural channel. The fifth was the tip of a bougie which was also removed through the urethra. In addition to the five above, M. Bazy, at the same meeting, reported five other unpublished cases of this kind. The first was the nozzle of a syringe in a female. The second was the bulb of an exploring bougie, the third a rubber tube, the fourth a Nelaton sound, the fifth a piece of chalk.

Anastomosis Between the Stomach and Esophagus, Also Resection of the Thoracic Esophagus.—SAUERBRUCH (*Zentralbl. fuer Chir.*, January 28, 1905).—The author, who is already well known for his surgical work upon the chest while the subject and operator are within a partial vacuum, gives us in this article a further extension of his work along this line. His idea is to safely accomplish what has hitherto seemed impossible on account of sepsis, leakage and pneumothorax. He makes an anastomosis by cutting down upon the diaphragm, pulling up the fundus of the stomach, pushing a Murphy button down from the mouth through the esophagus into the stomach and then grasping the tube of the same through a little hole in the wall of the stomach. The other half of the Murphy button is pushed down the esophagus to the desired point where the wall is slit over it and its tube pushed through. The two halves are now united and naturally an anastomosis easily secured. In order to secure earlier adhesion of the parts anastomosed, Lugol's solution is freely painted upon them. It is very important that the fundus of the stomach be tightly sewn to the diaphragm, since three of the author's thirteen dogs died on account of a total hernia of the stomach into the chest. The esophagus is resected in the following manner: After the anastomosis has been made in the way above described, the esophagus is cut through and inverted just below the button, and, after the desired portion has been removed, the lower extremity simply turned down into the stomach, very much after the manner that one disposes of the stump of the appendix. The ideas expressed in the article are certainly intensely interesting; still, they have not yet been tried upon the human.

Interscapulothoracic Amputation.—COBB (*Annals of Surgery*, February, 1905).—This extensive operation was done upon a young man for an osteosarcoma of the upper end of the humerus. The interesting point of the whole operation was that no shock supervened, simply because the blood supply to the parts was cut off at first and then the brachial plexus was injected with cocaine before it was cut across. A preliminary diag-

nostic incision had been made and when the specimen was examined later all of the veins were found to be full of sarcomatous thrombi, which undesirable condition probably resulted from the incision. The middle third of the left clavicle was first divided subperiosteally and after the subclavian vessels had been found and ligated there was practically no bleeding during the operation. Various methods of controlling hemorrhage in this operation are discussed by the author, but the one he used seems to him the one which should be most favorably considered. Unfortunately, the case died of recurrence about a year later.

A Case of Dermoid Cyst in the Region of the Shoulder.—DELAGENIERE (*Archiv. Provinc. de Chir.*, January, 1905).—A man thirty-three years of age with a large tumor in the left axilla applied for surgical treatment. He said that he had noticed nothing of the mass until about a year before, when he attempted to lift a very heavy sack, since which time the growth had been gradual. It was fixed upon its base, was painless and slightly fluctuating. In removing the mass it was impossible to completely dissect it from the muscles of the region, consequently fibers of them were left adherent. In the first costal interspace the pleura was torn and adhesions to the lung divided, consequently it is seen that a rather difficult operation was necessary. On examination the tumor proved to be a dermoid cyst, full of the characteristic sebaceous material. It was impossible to tell before the operation whether one had to do with a lipoma, a cold abscess or a cystic tumor, and the author is of the opinion that the mass originated from the lung on account of the fact that it gradually widened the first interspace through which the attachment came. He has been unable to find a similar case anywhere in the literature.

Resection of the Carcinomatous Stomach.—KELLING (*Archiv. fuer klin. Chir.*, Band 75, Heft 2).—The author has made fifty-four resections of the stomach, consequently his opinions must possess definite value. The operation is absolutely contraindicated in patients of great age or those who are the subject of other severe disease. Ascites is an absolute contraindication, as is, of course, glandular swelling in the neck or elsewhere. Metastases in the skin of the abdomen are always to be looked for and the rectum must always be examined for a similar tumor, as must the ovaries and uterus in the female. Icterus speaks decidedly against radical operation, as does any interference in swallowing. The reaction of the stomach contents is of very decided importance. An acid reaction protects the patient very decidedly against infection, since the acid stomach contents does not contain nearly so virulent germs as when no acid, not even lactic acid, is found. This last is a common accompaniment of gall stones even where there is no stomach cancer. Resection may be done even where there are metastases in the liver, since it gives the patient so much more and so much longer relief. Kelling has tried some of the most astonishingly complicated processes looking toward a complete gastrectomy. They must be read in the original, however, to be appreciated. It is worth noting, however, that he lost five consecutive cases of this kind. He tried various ways of sucking the abdominal defect dry of secretion, but was not very successful in this after the

stomach had been removed. The article, however, contains many valuable, practical hints and is worthy of perusal.

Dangers from the Indiscriminate Use of Cathartics in Acute Intestinal Conditions.—HARRIS (*Journal of the American Medical Association*, February 25, 1905).—The effort is here made to impress upon the reader with justice the idea that it is not so much the fact that the bowels do not move, but the condition which prevents them from moving which constitutes the danger for the patient. Hence there is no earthly use, and indeed positive harm in hammering away at the symptom without due regard for the cause. We simply succeed by cathartics in further distending the already overloaded bowel, rendering it more permeable to the passage of germs and generally reducing the patient's vitality. In one case at the author's hands, improper treatment produced so much blood in the stool as to influence him in a doubtful diagnosis to consider the probability of intussusception and he opened the abdomen of a normal individual. It fortunately did no harm, however, but illustrates one of the dangers of cathartics in these conditions.

The Operative Treatment of Ruptures in the Quadriceps Extensor Muscle Above the Kneecap.—QUENU and DUVAL (*Revue de Chir.*, February, 1905).—The authors have collected nineteen of these cases from the literature, to which they have added three of their own, and they are heartily in favor of operative treatment for the condition on account of the excellent prognosis assured, while, on the other hand, not much can be said in commendation of an expectant therapy. The amount of tearing has varied naturally in different cases, but a complete rupture is more common than any other variety. Involvement of the joint is common, as evinced by the fact that hemorrhage into the joint cavity is usually an accompaniment of the lesion. The amount of separation between the parts, of course, varies greatly, as it does in fractures of the patella, which is in reality the same kind of an injury. Double ruptures have been observed. Walker having reported six cases of this kind. In the twenty-two cases reported there was no mortality and not a single bad functional result. The method of suture preferred by the authors is very similar to that employed where a wire loop is placed around the edge of the patella. This is known as a transverse suture as opposed to the ordinary multiple vertical variety. The deep transverse fibres in the muscles and tendons of this part prevent a transverse suture pulling through. In fact, the authors state that a pull of forty pounds will not loosen such a suture. Silver wire has most commonly been used by them.

The Indications for the Goitre Operation and Its Technique.—SCHWYZER (*The Northwestern Lancet*, February, 1905).—Some valuable points appear in this article. The author believes that goitre operations for cosmetic purposes should be done only by men who are so thoroughly competent that they do not in any way endanger the patient. He uses local anesthesia for every case on account (in addition to the usual reasons given) of the fact that hemorrhage results from the slipping of ligatures during coughing and excitement after operation. He also fears the

lung changes which result from general anesthesia. The superior and inferior thyroid arteries should be ligated as early as possible, then there will be no difficulty in controlling hemorrhage during the rest of the operation. The author was formerly an assistant of Kocher, consequently his word carries weight.

Hæmatoma in Tendon Sheaths.—KUETTNER (*Beit. für Clin. Chirurg.*, Band 44, Heft 2).—This rare but extremely important lesion appears in the literature in only two instances. The author saw it in one case where a young man fell on the outstretched hand, and in a short time the dorsal tendon sheaths were filled with blood, which disappeared in the course of some ten days by the use of massage, etc. No permanent disability resulted, and the patient was soon free from pain, which was exceedingly severe at first. The sheaths involved were those of the extensor communis digitorum, extensor indicis and the extensor pollicis longus. The reasons for making the diagnosis were three, namely, the appearance of the swelling at once after the injury; second, its rapid disappearance as a result of compression and massage, and, third, the appearance of sigillation a few days after the injury.

DIAGNOSIS.

IN CHARGE OF

A. E. TAUSSIG, M. D.

Diagnosis and Therapy of Renal Tuberculosis.—L. CASPER (*Deutsche med. Wochenschr.*, 1905, No. 3).—The clinical methods by which it has become possible not only to make with certainty the diagnosis of renal tuberculosis, but also to determine whether the disease is bilateral or unilateral and, if the latter, which side is involved, are of comparatively recent date. Every case of renal tuberculosis begins unilaterally, and spreads to the bladder and to the other kidney only after the lapse of time. If diagnosed while still unilateral, a nephrectomy may result in a radical cure, and this explains the great interest now taken in the early diagnosis of this disease.

The subjective symptoms, such as pain on urination, frequent micturition, pain and tenderness in the region of the kidneys are singly of little diagnostic value, since they occur in other lesions of the urinary apparatus. The same may be said of attacks of renal colic which may result from ureteral obstruction due to any cause, whether stone, cheesy masses or kinking of the ureter. Nor is the general appearance or the subjective feeling of the patient of importance. An individual with well-marked renal tuberculosis may appear and feel himself to be in perfect health.

Of the objective signs the condition of the urine is of chief importance. It contains pus, macroscopic or microscopic blood, casts, albumen, epithelium. All these constituents, however, occur in other conditions and may be missing in tuberculosis. Pus cells alone are hardly ever en-

tirely absent. The only pathognomonic sign is the finding of tubercle bacilli, which according to Casper may be found in 80 per cent. of these cases. Those cases, however, in which in spite of careful search no tubercle bacilli can be found are of especial diagnostic difficulty. In such cases it must be remembered that the absence of all bacteria in a pus urine is a very suspicious sign. Tuberculous urine, containing no tubercle bacilli, is characterized by the absence of all other micro-organisms. This is similar to the findings in pleuritic effusions: those in which the fluid contains neither tubercle bacilli nor other bacteria, are usually of tuberculous origin. Such a sterile purulent urine should therefore make one suspect renal tuberculosis, and should lead to the making of cultures and to the inoculation of animals.

The former has been worked out by Suter. He found that if urine obtained in a sterile manner by means of a catheter be spread on ordinary culture media a growth of one or more bacteria is always obtained in ordinary pyogenic infections. In tuberculous urines, on the other hand, there is usually no growth since tubercle bacilli do not multiply on the ordinary media, and such a negative result obtained with a purulent urine speaks for the diagnosis of urinary tuberculosis. On the other hand, mixed infections are not very rare, so that a tuberculous condition may be present even where the culture shows the growth of pyogenic micro-organisms.

Entirely trustworthy results can only be obtained by means of animal inoculation. Casper recommends the following method originated by Belgard. A number of guinea-pigs are each given an injection of 0.5 g. of Koch's tuberculin T. R. If they are tuberculous this is an absolutely fatal dose, so that the survivors may be positively known to be free from tuberculosis. One of the latter is given the washed urinary sediment suspended in a few drops of sterile water intraperitoneally, another is given the same amount under the skin. If the urine contains tubercle bacilli the latter animal will, after three to four weeks, have palpable, often broken-down glands near the fore or hind legs, according to the site of the injection. The guinea-pig, inoculated intraperitoneally, should be killed after six weeks. It will be found to have a miliary tuberculosis. If both animals are free from tuberculosis, the urine positively contained no tubercle bacilli, and it may be stated with certainty that the pyuria is not due to a tuberculous infection.

Having established the tuberculous nature of the case, it next becomes necessary to decide which kidney is involved. To a certain extent the patient's subjective sensations may help us here. Pain may be entirely absent, but if present it is, unlike the pain of kidney stone, always referred to the affected side. The palpation of the kidney, too, is of great importance and often gives significant information. Nevertheless, its value can easily be overestimated. Not only cannot the kidneys always be felt, but an enlarged kidney need by no means be diseased. Casper has recently seen two cases in which the tuberculous kidney was small, whereas the other healthy kidney was enlarged on account of a compensatory hypertrophy. Neither will the cystoscopic examination of the ureteral papillæ give us decisive information regarding the side affected. The only certain method is ureteral catheterization, whereby the urine of each kidney can be collected separately and examined. Such an exam-

ination will not only show beyond doubt which side is diseased, but by means of a comparison of the urea, the freezing point and the glycosuria (after phloridzin injection) of the two urines will give us much information as to the ability of the healthy or less profoundly diseased kidney to fulfill the uropoietic function of both.

A New Test for Acet-acetic Acid in Diabetic Urine.—E. RIEGLER (*Zeitschr. f. klin. Med.*, 1904, Vol. 54, No. 4).—The reagents required for this test are a 10 per cent. aqueous solution of hydriodic acid and chloroform. To 15 c. c. of the urine, 2 c. c. of the hydriodic acid solution and 3 c. c. of chloroform are added, and the whole well shaken. In normal urine the chloroform takes on a violet color, whereas if di-acetic acid be present, the chloroform remains colorless. The explanation of this reaction is probably as follows: The urates present in all urine reduce the hydriodic acid, setting free iodine. Ordinarily this will give its color to the chloroform. Di-acetic acid, however, if present, absorbs the free iodine, and so prevents the coloration of the chloroform. The test is said to be delicate and reliable.

Dorsal Auscultation of the Heart.—LIBENSKY (*Wien. klin. Rundsch.*, 1904, Nos. 50-52; *Deutsch. med. Wochenschr.*, 1905, No. 3).—In valvular disease of the heart much information regarding the pathological conditions can be obtained by auscultation over the back. In mitral disease the murmurs are loudest at the lower angle of the left scapula. The sounds heard here are loud in proportion to the degree of dilatation of the right ventricle, as a result of which the heart is crowded backward. In aortic lesions the loudest murmurs audible on dorsal auscultation will be heard in the left supra-spinous fossa.

The Justus Reaction in Syphilis.—POLLIO and FONTANA (*Gazz. d. Ospedali*, 1905, No. 1).—A diagnostic test for the presence of syphilis, first recommended by Justus, is supposed to consist in a marked diminution of the per cent. of hemoglobin in the blood after a week's energetic mercurial therapy. As a result of forty carefully observed cases, the writers declare the test unreliable and of no value.

A New Test for Blood.—SCHILLING (*Therap. Monatsh.*, 1904, No. 12). According to the writer, traces of blood in a fluid can be recognized by the addition of a few drops of a 20 per cent. solution of hydrogen peroxide. The blood promptly decomposes the reagent, and shows its presence by means of the production of numerous small bubbles of oxygen, while the solution is decolorized. The test is said to be positive if blood is present in the proportion of 1 to 1600. While there are more delicate tests for blood, this one certainly has the merit of simplicity and convenience.

The Diagnosis of Retraction of the Apex of the Lung.—SORGO (*Wien. klin. Wochenschr.*, 1904, No. 50).—In incipient pulmonary phthisis the apex of the lung often becomes adherent to the subclavian artery. As the lung tissue retracts, it pulls upon the artery, producing a kink and thereby a difference in the two radial pulses. Often a change in the po-

sition of the arm releases the kink, and so makes the radial pulses alike again. This phenomenon is a trustworthy sign of tuberculous apical retraction.

A Test for Hyperacidity of the Stomach Contents.—CIPOLLINA (*Riform. med.*, 1904, No. 49; *Deutsch. med. Wochenschr.*, 1905, No. 1).—A mixture of anilin-water with calcium or sodium hypochlorite (chlorinated lime or Labarraque's solution) has a violet color, which is modified by the addition of a solution of hydrochloric acid of a strength greater than one-fourth per 1000. Concentrations of one-fourth to two per 1000 produce a violet-red color that soon turns yellow, whereas concentrations greater than two per 1000 produce an amethyst-blue color. The presence of lactic acid does not influence the reaction. This would seem to be a convenient rough and ready test for the degree of gastric acidity.

A New Method of Obtaining Gastric Contents.—CARNOT (*Deutsch. med. Wochenschr.*, 1905, No. 2).—At a recent meeting (November, 1904,) of the Societe de Biologie of Paris, Carnot suggested a new clinical method for gastric analysis. Instead of obtaining the stomach contents after a test meal, Carnot produces a reflex gastric secretion by having the patient chew but not swallow food. This secretion can then be obtained by means of the stomach tube, and has the advantage of being entirely free from food remnants. Analysis of secretion obtained by this method show that each individual has his own peculiarities as regards not only the amount of acid and pepsin secreted, but also as regards even the occurrence or absence of this reflex secretion. This, together with the fact that as yet we have no information as to whether this reflex secretion is identical with the ordinary secretion after the ingestion of food, renders the method of little clinical value until further research has cleared up these dubious points.

THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

The Treatment of Capillary Bronchitis With Wet Mustard Packs.—HEUBNER (*Therap. d. Gegenwart.* 1905, p. 1), describes his method of combating the serious suffocative stage of capillary bronchitis in children. It is essentially counter-irritation by mustard. Half a kilo of fresh mustard flour is thoroughly stirred into one and a half litre of warm water until the fumes arising from the mixture become irritating to the eyes. This requires about ten minutes. A sheet sufficiently large to envelope the child is then saturated in this mixture, wrung out and spread on a blanket. On this the child is placed naked, then closely covered by the sheet from the feet to the neck, the blanket being brought over all, so that a moist mustard pack is the result. In this the child

should remain from ten to fifteen minutes, until it shows by its restlessness that the irritation of the skin is becoming pronounced. It is then quickly removed from the pack, washed in plain warm water to remove all trace of mustard, and then placed in a warm pack made by wringing a sheet out of plain water and covered by a blanket. In this pack the child should be left for one or two hours, the length of time being controlled by the temperature of the child, which is likely to increase. When this occurs, or when a very profuse perspiration appears, the child should be removed; again bathed in plain warm water, then dried, clothed in an ordinary gown, and returned to bed, where it should be left undisturbed. The procedure should not be repeated within twenty-four hours, but in severe or prolonged cases may be employed daily for three or four days. Though more tedious, it is applicable under a greater variety of circumstances than the hot mustard bath, and as it is better borne, allows time for a more pronounced effect.

Treatment of Hæmoptysis.—HOCHHANG (*Deutsch. med. Wchschr.*, 1905, p. 169), presents the following outline: In the smaller hæmorrhages of early pulmonary tuberculosis, the patient is to be put to bed, forbidden to speak, and given nourishment and liquids in the form of cold drinks—in the first few hours preferably only cracked ice. An ice-bag should be placed on the side of the chest on which the lesion is suspected, or, if this cannot be located, on the heart: the author is emphatic in his belief that the reflex effect of cold so applied is of distinct value. Internal styptics he also believes to be of positive value: among these, common salt given in dessertspoonful doses in the least possible quantity of water, ext. hydrastis canadensis, ten to twenty drops, or lead acetate in half-grain doses—these given every two hours—also, ol. terebinthinæ gr. v. in capsules four or five times in twenty-four hours. Opium or morphine should be used less frequently than is the case: the indication for its use is a frequent explosive, irritative cough which promotes bleeding; a moderate cough which serves only to expel the blood in the bronchi should not be interfered with. The patient should be kept in bed for several days after the hæmorrhage has ceased, and then treatment of the essential condition taken up.

In the more serious hæmorrhages of the later stages of tuberculosis the same preliminary measures of rest, etc., should be taken, and in addition, certain chemical and physical measures. Most efficient of the chemical means is the subcutaneous infusion of gelatin which the author employs in ten per cent. solution as supplied in aseptic vials by Merck, using 40 c. c. at a dose. Other measures consist in the hypodermic use of ergotine and adrenalin(?) Of the mechanical measures, two are of special value: (1) The application of a tourniquet to one thigh with sufficient pressure to obstruct the return of venous blood, but not sufficient to interfere with the arterial flow; and, (2) the stopping of the affected side of the chest, thereby putting it at rest. As a last resort in cases in which the hæmorrhage may, with reasonable certainty, be located in a superficial cavity, the overlying portion of the ribs in contact with the cavity may be removed in the hope that the cavity will collapse and allow the arteries involved to retract.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

Rapid Method of Imbedding in Paraffin by Means of Acetone.—F. HENKE and E. ZELLER (*Centralbl. f. Pathol. Anat. u. Allg. Pathol.*, Vol. xvi, No. 1).—Fresh pieces of tissue are fixed and hardened in acetone (pure), which, for fragments up to 1 cc. takes half to one hour. From this they are directly transferred to paraffin of the melting point 52 C. The material prepared in this way allows of applying all of the ordinary staining methods, including those for elastic fibres and tubercle bacilli. The method recommends itself highly on account of its simplicity, because no changing of fluids is necessary, as in that similarly rapid method devised by Lubarsch. Altogether, the use of acetone for histologic purposes is too restricted, the more unjustly, as we have in this country, through the work of Fisch, learned a great deal of its many advantages.

About the Relation of the Nervous System to Regeneration in Amphibia.—RICHARD RUBIN (*Bostock*, 1904).—The dependence of the differentiation of tissues, among others the muscles, upon the nervous system, has so far only been studied on the basis of teratologic phenomena. Rubin's paper, that was directed by Barfurth, has, therefore, a great pathological and teratological interest. He has shown by his experiments that the influence of the nervous system on the development of musculature and on its regeneration in earlier stages of development, differs from that in the regeneration of an adult animal. Even in the latter, regeneration at first occurs without the coaction of the nervous system; only later the latter is observed. The general results of the author are as follows: If the spinal chord in the tail of a larva of an axolotl is destroyed in one place, and if, peripherally from this place, the tip of the tail is removed, a regeneration of this tip takes place in spite of the interruption of the continuity of the spinal chord.

The removal of the whole brain and the sense organs does not prevent, in young larvæ, the regeneration of the tail when it has been cut off.

The elimination of the nervous system in *Siredon pisciformis* does not interfere with the prompt appearance of the first stages of regeneration. Only later the absence of innervation expresses itself by an increasing slowness and finally stopping of the regeneration.

Histologic Studies About the Edema of the Skin and the Subcutaneous Tissue.—KARL ZIEGLER (*Beitr. z. Pathol. Pathol. u. Allg. Path.*, Vol. 36, Heft 3).—Ziegler studies the histologic changes of the tissues in different forms of edema, paying especial attention to the appearance and fate of free cells. The investigations extended to twenty-one cases of very varying ages and history. It was found that the infiltration of the tissue by fluid always commences in the subcutaneous tissue, causing its distension. Only secondarily an infiltration of the papillary corium

portions occurs. Of forms of free cells occurring in edema, the author differentiates three: red corpuscles, leucocytes, and lymphocytes. Most important is what he says about the lymphocytes, discussing their relation to other cells designated usually by other terms. Those lymphocytes, derived from the blood vessels, undergo very curious and characteristic changes. They are called polymorphous lymphocytes. They are identical with the polyblasts of Maximow, the leucocytoid cells of Marchand, the granular cells of Marschalko. The plasma cells of Unna and Pappenheim also belong to this category. In normal tissue klastocytes and mast cells are usually classed as different forms of cells. In the presence of edema it can be seen that lymphocytes become klastocytes. Mast cells are polymorphous lymphocytes, showing metachromatic granula. Mast cells and klastocytes differ from connective tissue cells by the smaller, more chromatin containing nucleus, and the granular cytoplasm that never connects by processes with homologous cells.

Assimilation and Heredity—An Energetic Theory of Heredity.—FR. HAMBERGER (*Wien. klin. Woch.*, 1905; No. 1).—Experiment has shown that cells and tissues performing the same functions in different species of animals must differ from each other, although morphologically and chemically they appear identical. It is assumed that this difference is due to a different character of the biochemic structure of the proteids in each of them; we must believe that each species has a specific structure of the latter. In applying this conception to the problem of heredity, the preservation of the species will appear as an energy or force that remodels proteids taken up as food to a structure identical to the structure of the proteids of the species. This is what is called assimilation. Cells that vary in function, but are alike in their specific character, must have something in common in the biochemic structure of their proteids. If multicellular organisms propagate, this specific character of the proteids is retained. Extended to the conception of races, a common racial specificity of this structure is present. And, finally, each cell of an organism must be possessed of a specific individual structure. The general heredity is to be explained by a lasting and always constant energy of the proteids.

The Hydrophobia Question.—REYNOLD WEBB WILCOX (*The Southern Clinic*, 1905; No. 2).—Attention is called to this paper to show how widely different well established facts are interpreted in medical literature to suit certain personal idiosyncrasies. By a great array of observations and literature, Wilcox tries again to demonstrate that a pathologic entity, called hydrophobia, does not exist, but is only the effluence of ignorance and superstitious belief. It is, of course, unnecessary to try to convince the author of his error, but papers like these serve to cause a false feeling of security, and may ultimately lead to dire consequences. This is the more to be emphasized for this paper, as it is written with a security of assertion and judgment about the results of scientific investigation so far obtained that may lead an uninformed reader to believe the author.

A Tumor of the Pleura, Derived from Aberrant Lung Tissue.—NIELS MUUS (*Virch. Archiv.* Vol. 176, Heft 1).—Muus found in a cyanotic newborn a polypous, smooth tumor of the size of a walnut, that was situated at the surface of the left side of the diaphragm, close to the hiatus cardiacus, covered by pleura. The pedicle of this tumor, which resembled a lobe of the lung, penetrated the diaphragm and received an artery from the left suprarenal. There was found, besides, a strand of tissue, four cm. thick, adhering to the stomach. Through this strand a fine canal made its way, which, however, did not communicate with the stomach. In this canal small complexes of cartilage ciliated epithelium, and in the septa between them, cross-striped muscle fibres appeared. The lungs and bronchi of the infant were normal. The tumor must be explained as a misplaced lung.

Annual Report of the Surgeon General of the Public Health and Marine Hospital Service of the United States for the Fiscal Year 1904.—(Washington, Government Printing Office).—This report fills the mind of the reader with high appreciation for the immense, careful work done during the last year under the guidance of the Marine Hospital service. It is a drastic demonstration of the feeling of duty with which its responsible task is dealt with. A review of the contents is impossible, but it must be mentioned that the volume contains, besides the official reports and records, scientific contributions of lasting value. This pertains as well to discussions about questions on infectious diseases (especially yellow fever) as well as to the original papers. In regard to hygienic and sanitary procedures the report is a rich fountain of information.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

The Use of Gersuny's Paraffin Injections in Gynecological Work.—STOLZ (*Monatsch. f. Geb. u. Gyn.*, xx, 6).—Subcutaneous injections of soft paraffin have been employed in cases of incontinentia urinæ and of prolapsus uteri and vagina. In case of complete defect of the urethra the injections are made under the prolapsed mucosa of the bladder. If the urethra is intact, one larger injection near the neck of the bladder usually proves sufficient. But there is always the danger of embolism following the injection, and, therefore operative methods must be given preference and the injections reserved for cases in which an operation for certain reasons becomes impossible. The same is true for large injections under the vaginal mucosa, as successfully employed in a few cases of extensive prolapse of the vagina or uterus. Here, first, the pessary and then operative interference must be considered before Gersuny's method is resorted to.

The Effect of Roentgen Rays Upon Ovaries.—HALBERSTAEDTER (*Berl. klin. Woch.*, 1905, No. 3).—The writer observed that if one side of the abdomen of rabbits was exposed to the x-rays the ovary of this side became markedly smaller. In order to ascertain exactly the character of the influence of the rays he first laparotomized rabbits, examined their ovaries and then exposed the animals to the Roentgen rays. In this way he could ascertain the fact that under the influence of the rays the Graafian follicles completely disappear. This observation is, for obvious reasons, of eminent practical importance, and it will be the duty of every physician using the x-rays on women to guard against such a decidedly undesirable effect.

The Transmission of Antitoxins from Mother to Fetus—A Contribution to the Physiology of the Placenta.—OSCAR POLANO (*Zeitsch. f. Geb. und Gyn.*, Band 53, Heft 3).—The question whether antitoxins formed in the maternal system during pregnancy can be transmitted to the fetus *in utero* is one of considerable practical importance. If this question could be answered in the affirmative we could attempt to immunize the unborn infant. Some time ago Behring and some of his co-workers positively denied the possibility of a transition of antitoxins, basing their claim upon experiments on animals and theoretical reflections. The experiments of Polano on pregnant women lead to a different result. By injecting tetanus and diphtheria antitoxins into pregnant women he could demonstrate that the transgression of antitoxins is a normal and typical occurrence. Polano's investigations were carried out in a most careful way. Especially when experimenting with the diphtheria antitoxin he first ascertained the fact that the patient's blood did not contain this antitoxin, a very common occurrence. In all instances a portion of the injected antitoxins could be detected in the blood of the new born infant, so that Polano seems justified in concluding that such a transition is not limited to cases in which the integrity of the placenta is disturbed, as was claimed by Behring, but, as stated above, is typical.

The "Dangers" of the Schultze Method in Resuscitation of Asphyxiated Infants.—B. S. SCHULTZE (*Muenchn. med. Woch.*, 1905, No. 6).—The nestor of the German obstetricians and inventor of the well-known method of resuscitation defends in this short article his method. First antagonized by the majority of practitioners, his mode of artificial respiration, which was first advocated by him in the sixties of the past century, gradually began to gain in favor, and is at present a procedure a description of which probably can be found in every textbook of obstetrics of every nation of the civilized world. The acceptance of this method has become so general that it is used too extensively, and this fact accounts, according to the idea of Schultze, for the increasing frequency in recent literature of reports of unfavorable results. In the early history of the method records of broken ribs and clavicles and ruptured spleens were rather common; they began to disappear when the physicians learned how to swing the newborn infants. Other injuries to the babies, for which Schultze's method was blamed, were found to be injuries sustained in the course of labor. Of late Hengge (*Muenchn.*

med. Woch., 1904, No. 48,) pointed out the disadvantages and dangers of the method by giving the post-mortem findings of three children who had been swung. They showed ecchymoses in pleura, endocard and pericard, hemorrhages on the surface and in the parenchyma of the liver, etc. Hengge sees in them the effect of the attempts of resuscitation after Schultze. Schultze, in defense, however, reminds Hengge that long before he ever thought of his method these ecchymoses and hemorrhages were recognized by pathologists as the typical lesions of asphyxiation. Schultze calls once more attention to the fact, which apparently has been forgotten, that he himself considers the method only indicated for such extreme cases in which the child is pale and his muscles completely relaxed, a weak beat of the heart being practically the only symptom of life.

The Dangers of the Schultze Method.—BURCKHARD (*Muenchn. med. Woch.*, 1905, No. 6).—This is another paper which antagonizes an article of Hengge in which he warns against the use of the Schultze method. Hengge found in his cases and in others recorded in the literature hemorrhages in the spinal cord. From systematic examinations of newborn infants who died from asphyxiation, either during labor or shortly afterward, Burckhardt concludes that such hemorrhages are rather common. They possibly are dependent upon certain manipulations, as extractions or versions, and may at times be caused by the Schultze method, but not necessarily so. The pathological dignity of these hemorrhages is obviously dependent upon their extent, and in some instances may account for paralytic conditions. The advantages of the Schultze method are, however, so manifold and many that the occasional unfavorable result does not justify the advice to discontinue the method.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

Some Conditions Which May Be Mistaken for Meningitis.—BAUMANN (*Brit. Jour. Chil. Dis.*, February, 1905), in discussing the diagnosis of meningitis, calls attention to the fact that it is not the occurrence of the disease itself which produces diagnostic difficulties, but rather that a number of other diseases tend to assume a type simulating meningitis. The nervous system of the child is curiously unstable. Comparatively trivial ailments may mimic meningitis with an astounding degree of fidelity. The diagnosis of the three most common forms of meningitis in childhood, tubercular, posterior basilar and suppurative, are then summarized. The author then reports a series of carefully studied hospital cases, all of which adopted meningitic types, and so for a time at least caused diagnostic difficulties. The list includes cases of typhoid, lobar pneumonia, broncho-pneumonia, influenza, mastoid disease, middle-ear

disease, sarcoma of the brain, renal disease, gastro-intestinal disease and pseudo-meningitis.

It is probable that in many cases belonging to this category, the cerebral symptoms are caused by some toxic irritant produced in the course of the disease. It is therefore necessary in every suspicious case to consider carefully the history and symptomatology and to avail ourselves of all possible means of physical investigation. The history is frequently misleading. A history of influenza in the family, or of phthisis in the parents is often of importance. While a history of somnolence is, in and of itself not always important, the presence of headache accompanying and persisting during somnolence, is a suspicious symptom.

The author considers Kernig's sign of little diagnostic import. It is certainly present in a large proportion of cases of true meningitis, but it may also occur in a number of widely different morbid conditions, such as pneumonia, uremia, enteric disorder, etc. On the other hand, it is often absent in true meningitis. Tache cerebral is of still less value. Head retraction is of importance only when it is very pronounced, because in a lesser degree it may be the result of a number of trivial conditions. The pulse rate is worthy of careful observation. Slowness of the pulse with high temperature strongly suggests a cerebral lesion, though it does not serve to differentiate a meningitis from other cerebral lesions. Routine examination of urine often yields information of value. The examination of the optic fundus should never be omitted, though here again a negative result is often of little diagnostic value. On the other hand, optic neuritis and distension of the veins or blurring of the discs may occur in other conditions besides tubercular and suppurative meningitis.

Squint and nystagmus serve merely as confirmatory signs. Inequality of the pupils is not infrequently met with in healthy children. Examination of the ears should be made in all doubtful cases. Quinke's lumbar puncture should be undertaken as a matter of routine. Film preparations should be made from the fluid obtained and studied for micro-organisms, also for the variety of cells found. Normally the fluid contains few cells. In tubercular meningitis the mononuclear forms predominate, in suppurative lesions the polymorphonuclear.

The blood count may give information of value, as a count of over 25,000 or 30,000 is strongly suggestive of a suppurative process, especially if the polymorphonuclears predominate.

There is thus no single symptom or sign which will enable us to differentiate a meningitis from another disease with cerebral symptoms. The correlation of history, symptomatology and physical signs will, however, often permit the drawing of a correct conclusion. Meningitis should be assumed only when the symptoms are not only present, but persistent.

Treatment of Pertussis with Pyrenol.—GOLDMANN (*Centralblatt fuer Kinderheilk.*, February, 1905), reports excellent results from the use of this remedy in whooping cough. Pyrenol is a chemical combination of thymol, benzoic acid and salicylic acid. It thus combines various properties, acting as a paraciticide, an antipyretic, an antispasmodic and as

a stimulant expectorant. Its use has never been followed by any bad effects. Many cases have apparently been aborted by its use, while the duration of severe attacks has doubtless been shortened. The paroxysms themselves are not nearly as severe as those ordinarily seen, in cases treated in this way.

The author recommends that teaspoonful doses of a $\frac{1}{3}$ per cent. solution (according to age) be given three times a day. Syr. rubi idaei or syr. cort. aurant, will make the drug perfectly palatable.

The method of treatment has been tried both by the author and by a good many other observers, with uniformly good results.

Concerning Natural Immunity of the Child During the First Year of Life.
—SCHUETZ (*Jahrbuch fuer Kinderheilk.*, January, 1905), has made a series of experiments to determine how much the gastro-intestinal tract of infants is protected against bacteria and toxins. He endeavored to ascertain what the toxin-inhibiting or toxin-destroying power of the gastric juice of the newly-born is. For the purposes of his investigations he used diphtheria toxin. This was mixed in certain definite proportions with the gastric juice (removed by the stomach tube) of breast and artificially fed infants. Guinea pigs were used as the test animals, the minimal lethal dose of the toxin used having been determined by a careful series of control experiments. For the details as to the technique, and the results of the extensive series of experiments, the original communication must be consulted. The conclusions reached by the author as the results of his study are as follows:

1. The power of the gastric juice to neutralize diphtheria toxin varies greatly in different infants, and appears to be independent of the age of the child, the form of its nourishment or the condition of its nutrition.
2. Human milk does not appear to possess any notable antitoxin power against diphtheria toxin.
3. Boiling destroys the antitoxic power of the gastric juice.
4. A high grade of acidity of the gastric juice may perhaps reduce the toxicity of diphtheria toxin.
5. Aside from congenital immunity, the natural immunity of the child appears to be largely a matter of proper development, and quite independent of its manner of nourishment.

Primary Diphtheria of the Pharyngeal Tonsil.—In the ordinary course of diphtheritic angina it often happens that the membrane spreads up to the vault of the pharynx, covering the tonsil there. Such secondary extension is usually not a matter of particular significance, except as it signalizes the progression of the disease. According to Rocaz, however (*Arch. Med. des Enf.*, February, 1905), it sometimes happens that the process is primarily located on the pharyngeal tonsil, so that we have what this author calls a "diphtheritic adenoiditis." The symptomatology of this condition may be summarized as the association of the ordinary signs of adenoid vegetations with the symptoms of a diphtheritic intoxication.

A child with the ordinary signs of adenoids suddenly finds difficulty in breathing, nasal breathing being all but impossible. There are all the characteristics of an ordinary coryza. With this there is fever, con-

stitutional disturbance, swelling of the glands of the neck, and often albuminuria.

The diagnosis, which may be suspected if the conditions noted above be present, can only be made definitely by a bacteriological examination so long as the membrane is limited to the area of the pharyngeal tonsil.

Rocaz considers the prognosis of this form of diphtheria grave because of the difficulty of diagnosis, so that serum therapy is often used too late; also because of the fact that absorption of diphtheritic toxins from the pharyngeal tonsil occurs particularly readily.

Rocaz, furthermore, believes that this form of diphtheria is much more common than is ordinarily supposed, having seen ten cases himself.

The treatment is, of course, that of diphtheria in general. Prophylaxis would, of course, consist in removal of the adenoids, and the author sees in the existence of this condition another reason for the routine removal of adenoid vegetations.

Treatment of Pneumonia in Infants and Children.—NORTHRUP (*Med. Record*, February 18th) insists upon the value of fresh air in the treatment of this disease. He reports two cases treated in mid-winter, where he had the window-sashes removed so as to be sure that plenty of fresh air could be secured. Both cases recovered. He reiterates his conclusions, previously published, with regard to the treatment of this disease. These he summarized as follows:

How to Cure a Baby with Pneumonia.—1. Castor oil, the first aid of the injured.

2. Fresh air, cool and flowing. The temperature of the room to be regulated inversely to that of the child.

3. Water, plenty, inside and out.

4. Quiet and rest. Tranquilizing influences about the patient.

5. Correct the feedings to prevent fermentation and the formation of gas in the abdomen. Hot salines if necessary.

6. Antipyretic: water, no coal-tar products.

7. Heart stimulants: fresh air, hot foot-baths, relieving tympanites and crowding. Drugs: whisky and strychnia.

How to Kill a Baby with Pneumonia.—Crib in far corner of the room, with canopy over it. Steam kettle; gas stove (leaky tubing); room at 80° F. Many gas-jets burning. Friends in the room, also the pug dog. Chest tightly enveloped in a waistcoat poultice. If a child's temperature is 105°, make a poultice thick, hot and tight. Blanket the windows, shut the doors. If these do not do it, give coal-tar antipyretics, and wait.

ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

A Slipping Cartilage in the Knee-Joint.—EDMUND OWEN, F. R. C. S., (*London Practitioner*, February, 1905).—In a recent examination paper for the degrees M. B., B. S., at the University of London, the following question was set in surgery: "Describe the Symptoms and Treatment of Injury to the Semilunar Fibro-Cartilages of the Knee?" The light-hearted, even casual manner, in which the operative methods of treatment were approached by many of the candidates prompted the author to write this paper. The "Margin of Error" in the knee-joint is in many ways similar to that of the abdominal cavity; that is to say, that if any micro-organisms find their way into the joint cavity the synovial membrane has very little power of dealing with them. We have very few reports of cases operated upon for internal derangement of the knee-joint that have "gone wrong." Perhaps this has led to the false impression that operations on the knee-joint are somewhat similar to hammer-toe operations or to osteotomy at the lower end of the femur for knock-knee. There is no surgical procedure that is not attended with risk, but the opening of a knee is a matter of the first magnitude. The writer believes that palliative methods should always be used first in these cases of slipping cartilage, then if an operation must be done the patient should thoroughly understand the danger, and the greatest care should be exercised to prevent infection. He calls attention to the fact that it is almost invariably the inner or fixed cartilage that gets adrift, whereas the outer one being able to follow the bones is able to escape, be the movement ever so violent. The removal of a displaced cartilage is an operation that gives the most gratifying results. The writer reports several cases, athletes, soldiers, dancers, etc., who needed perfectly functioning knees, where he removed the cartilage with perfect results.

Rheumatoid Arthritis; Some Observations on Its Treatment.—JOHN ORR, M. D., F. R. C. P. E., (*London Practitioner*, February, 1905).—The treatment of the late Dr. G. W. Balfour, at Chalmers Hospital, Edinburgh, was so successful that the author of this contribution has seen fit to follow it for the last ten years with great success; this treatment is considered under three heads:

I. *Dietetic.*—The object aimed at here is to give the patient a diet that is easily digested and assimilated; all red meats are abolished, food fried in fats is not permitted, potatoes, turnips, head of cauliflower, peas and beans are not allowed on account of the sugar they contain. Tea with milk in small quantity, saxon used instead of sugar, eggs lightly boiled, scrambled or poached, milk puddings prepared without sugar, clear soups, macaroni and milk soup are permissible.

II. *Internal Medication.*—Arsenic and iron given in small doses for three weeks out of each month and cod liver oil where it is well borne.

III. *Counter-Irritation.*—This is done by blistering, using the "em-

plastrum canthos," applying them to the swollen painful joints; painting with iodine is also good.

This plan of treatment should be carried out for two or three years, and when it can be supplemented by spa treatment, baths, electricity, etc., so much the better. The author gives the histories of four cases that were made better, and finally entirely relieved by these measures.

Dislocation of the Semilunar Cartilage of the Knee.—SCHLATTER (*Zurich. Beitr. z. klin. Chir.*, vol. xli, No. 2).—Schlatter adds five cases to the literature on this subject. He found a uniform history of rupture of some kind followed by sudden pain, resistance developing in the cleft of the joint and swelling of the capsule. The cartilage protruded more frequently during flexion while it disappeared in extension. The results of operative treatment were always good, rare cases showed some trivial disturbance of function during the course of years consisting of slight atrophy and limitation of extension. It is important that of sixty-two cases forty-five were internal meniscus dislocations.

The Ultimate Results of My Bloodless Reposition of Congenital Dislocation of the Hip.—A. HOFFA, Berlin (*Amer. Jour. Ortho. Surg.*, January, 1905).—Prof. Hoffa has treated more than 400 hundred cases of congenital dislocation of the hip by the bloodless method, 315 of these cases have been discharged from treatment for more than a year, these he has gone over carefully in order to make this report. Of these 315 cases 250 were unilateral and 65 were bilateral dislocations. Of the 250 unilateral cases 75 were real anatomic restorations with return of normal function. One hundred and sixty cases changed to anterior transpositions, 110 showing essential improvement over their former condition, 40 were unsatisfactory as far as functional results, 15 cases of the entire number relapsed. Here we have 75 per cent. success and 25 per cent. failure. The bilateral cases were not so satisfactory, 65 cases in all were subjected to manipulative reduction. Of these 65 cases only 5 showed absolutely faultless repositions, 32 were anterior transpositions with marked functional improvement, 10 cases relapsed on one side and were not benefited, 18 cases relapsed on both sides. Here we have 55 per cent. success and 45 per cent. failures. Hoffa states that on the whole he considers the treatment as very satisfactory and is grateful to Paci and Lorenz for their contribution to useful knowledge. He places the age limits in unilateral cases at from eight to ten years, and from six to 8 years in bilateral cases. He says that the degree of inward displacement, and the muscle shortening and joint rigidity, are more important in determining whether an operation will be successful or not than is the age of the patient. The importance of gymnastics, massage to the muscles and avoidance of forcible abduction during the period of after-treatment is great. Many cases can be reduced by several attempts when one attempt carried through would be too violent. Early diagnosis is the part of this field on which especial stress should be placed. In early years the cases are easily cured in the great majority of instances. Students should be impressed with the importance of making a diagnosis in these cases. The older cases should be satisfied with some of the palliative operations.

A Simple and Rapid Method of Recording the Lateral Deviation of the Spinous Processes in Scoliosis.—A. H. FREIBERG, M. D., Cincinnati, (*Amer. Jour. Ortho. Surg.*, January, 1905).—This method consists in using a piece of plate glass, one quarter inch thick, twenty inches long by six inches wide; through the middle of the length of this a black line is drawn. Having marked out the line of the spinous processes with a skin pencil, the piece of glass is held against the patient's back in such a way that the black line cuts the vertebra prominens above and the fold of the nates below; the deviation of the line marking the spinous processes is now followed on the glass with a pencil that will write on glass. The glass is then placed on a piece of cross section paper marked with a central line to correspond to the line on the glass and the curve may be copied accurately to its full size.

The Treatment of Club-Foot—Are the More Extensive Cutting Operations Necessary?—B. E. MCKENZIE, M. D., Toronto (*Amer. Jour. Ortho. Surg.*, January, 1905).—The various osteotomies, enucleations and resections done on the tarsus for the relief of congenital club-foot, all tend to shorten the foot already pathologically short; they interfere, also, with the development of a foot already behind its fellow in development. It would seem, therefore, that the burden of proof rests on those advising these operations to establish the fact that they are necessary. These operations at times end fatally, and are not infrequently attended by extensive sloughing and loss of tissue. Dr. McKenzie reports a case where he did a Phelps' operation on one foot and repeatedly manipulated the other foot. After a number of years the contrast between the feet was strongly in favor of the manipulative treatment. He believes that the surgeon should not begin his treatment till early in the second year; that cutting, aside from tenotomy and fasciotomy, is seldom or never required; that cases may be absolutely cured by manipulative measures and suitable retention apparatus; that the removal of bone is contraindicated and harmful; that in persons under fifty years of age congenital club-foot may be perfectly cured; that the time required for surgical treatment need not be more than three months. These conclusions are backed up by experience with 400 cases of congenital talipes equino-varus, ages varying between infancy and forty-six years of age. McKenzie has a special club-foot wrench which is very efficient; for apparatus he uses a night brace, and when the case is on its foot he employs only a shoe-raise on the outside to produce valgus.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

The Relation of Tertiary Syphilis to Tabes Dorsalis and Progressive Paralysis.—HUDOVERING and GUSZMAN (*Neurologisches Centralblatt*, February 1, 1905).—This is a very welcome addition to the literature on the

syphilis tabes question. It is certainly one of the most convincing of the recent papers on the subject. It directly meets the challenge of the opponents of the syphilis origin of tabes by agreeing to furnish tabetic statistics from a syphilitic material. It thus attempts to answer the question what proportion of late syphilitics develop tabes, and not what proportion of tabetics have syphilis? The difficulty of such an investigation can be easily seen. The material was selected from a large dermatological institute, and consisted only of those cases in which there were undoubted evidences of tertiary syphilis. These patients, with all the data in regard to the original infection and in respect to treatment were then sent to a psychiatric clinic for further observation and treatment, and likewise for careful examination of their nervous systems. In all there were studied fifty cases, twenty-four men and twenty-six women. The age variation was between twenty-four and sixty-four years. It is worthy of note that almost half of the women were unaware of their syphilitic infection. The neurological examination of this material shows the following: Normal nervous system, 44 per cent.; combined system disease, 21 per cent.; suspicious cases, 8 per cent.; tabes dorsalis, 24 per cent.; progressive paralysis, 14 per cent.; tabo-paralysis, 8 per cent. These conclusions are noted. In this material of tertiary syphilitics, which had become syphilitic at least three years before, there was found only 44 per cent. of the cases with healthy nervous systems; tabo-paralysis, progressive paralysis and tabes dorsalis, 46 per cent.; add to this the suspicious cases, the total will be 54 per cent.

The Misuse of Tendon Transplantation.—H. OPPENHEIM (*Berl. klin. Woch.*, 1905, No. 7).—In a brief paper the author calls attention to the dangers of a too reckless application of the method now much in vogue of transplanting tendons for the relief of paralysis and contractures. To illustrate the danger, a case is described which was regarded as suitable for this procedure, when, as a matter of fact, the symptoms were due to a tumor of the eleventh lumbar vertebrae. Other cases of progressive muscular atrophy in the so-called neuritic form of this disease have been operated upon without the true condition being thought of until long after the operation had been done. Oppenheim declares that the surgeon or orthopedist who plans to do tendon transplantation or a muscle operation of a similar nature must feel it his duty to determine beforehand that the condition is not due to a progressive disease, and that it is due to a process that has run its course and has become stationary. This definitely proves this one fact, after all other causes are taken into consideration, namely: That there exists a close relation between syphilis and the diseases of the nervous system studied. This conclusion can be weakened only by showing a like proportion of these diseases in a material that is not syphilitic.

A Case of Amaurotic Family Idiocy.—McKEE (*American Journal of Medical Science*, January, 1905).—The report of this case is followed by a consideration of the eye findings, the pathological examination of the nervous system and the histological changes found in the eye in the case described. This series of papers forms a very complete summary of what we know at present of this very interesting disease. Sachs, more

than any other English author, deserves the credit of recognizing the clinical picture of the disease, and he has summed up the principal symptoms of this curious affection as follows: 1. Mental impairment, appearing during the first months of life, and leading to absolute idiocy. 2. A paresis or paralysis of the greater part of the body; this paralysis may be either flaccid or spastic. 3. The reflexes may be normal, deficient or increased. 4. A diminution of vision, terminating in absolute blindness; changes in the region of the macula lutea and later optic nerve atrophy. 5. Marasmus and a fatal termination as a rule about the age of two years. 6. The occurrence of the disease in several members of the same family. The child described in this paper is one year old, and shows the first four conditions in the group of symptoms noted above. The child died as a result of a general catarrhal pneumonia, and the eye, brain and cord were saved for subsequent examination.

Ocular Manifestations in Amaurotic Family Idiocy.—BUCHANAN (*Am. Jour. Med. Science*, January, 1905).—In this case the following eye ground changes were found in addition to the other eye symptoms: The pupils were unequal, responding to the light. The media were clear, showing a scleral ring out and a very marked pigment ring beyond. The discs were atrophic and bluish white in color. The vessels were very much reduced in size, especially the arteries, which in the left eye were so small that it was difficult to trace them over the red eye ground. The retinal pigment was absent in many places. The macular region in each eye showed a pathognomic condition. The fovea showed as a dark red oval with sharply defined edges, the color corresponding to that of the veins. At its center a tiny yellow reflex was seen. Surrounding the fovea was a large, greenish white, oval patch, very dense at the fovea, and gradually fading away to the periphery. Several minute retinal vessels were traced over the white area. In both the fovea and in the surrounding oval the long axis was horizontal, the latter measuring about one and one-half discs in diameter.

Histological Examination of the Eyes in a Case of Amaurotic Family Idiocy.—SHUMWAY and BUCHANAN (*Am. Jour. Med. Science*, January, 1905).—The sections cut in paraffin pass directly through the fovea centralis and macula. The ganglion cells were found in an advanced stage of degeneration. The retina as a whole is thinner than normal, and the thinning seems to be at the expense of each of the layers. The examination here made confirms the view that the essential change in the eyes are a degeneration of the ganglion cells of the retina and of the nerve fibers of the optic nerves and tracts which are genetically a portion of the central nervous system.

A Pathological Study of Amaurotic Family Idiocy.—SPILLER (*Am. Jour. Med. Science*, January, 1905).—The cells throughout the whole nervous system showed the most intense alteration. The machi stain shows intense degeneration in the white matter in the brain and cord, especially in the former. No signs of inflammation were found anywhere. A piece of one plantar nerve shows considerable degeneration. Spiller, no more

than Sachs, accepts the view that the disease is an acquired or a toxic disease.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

A Report of Eighty-four Operations on the Kidney and Ureter.—BREWER (*Medical Record*, February, 1905).—These cases represent the writer's experience in a period of over ten years, and he here presents the results, enumerates the pathological conditions found and calls special attention to certain groups of cases which presented features of unusual interest or difficulties in diagnosis. The cases consist of carcinoma, tuberculosis, pyelonephritis, pyelonephrosis and multiple septic infarcts from blood infection. In 41 per cent. of the cases giving a clinical history of calculus, and this in many instances confirmed by more accurate investigations, the diagnosis was wrong. In order to elicit the cause of these mistakes the author has carefully reviewed the history of thirty-six cases and investigated the symptoms with reference to pain. It is noteworthy that the point of greatest intensity of pain was not infrequently located somewhat below the kidney, and in several instances at or near McBurney's point on the right side, or on a corresponding point on the left. Vomiting was found to be a very constant accompaniment of severe colic. Frequent or painful micturition, occasionally associated with severe tenesmus, was present in twelve of the twenty-one cases of stone, it was absent in seven and unrecorded in two; in fact, it was found to be present in one-half of the cases of stone in the kidney. Fever appeared to be a symptom only if the ureter became occluded. Tenderness over the kidney or ureter was a constant symptom. Blood in the urine is usually present at some time, though it may be in microscopic quantity, yet it is often entirely absent at the time of a given examination. The presence of pus in the urine is dependent upon so many factors that it is of very little value in the diagnosis of renal or ureteral stone. It is to the employment of the cystoscope and the ureteral catheter that surgery owes much of the advance that has been made in diagnosis and in determining the competency of the kidney. The x-ray in competent hands is, in the writer's opinion, a most valuable method of examination for the diagnosis of calculus disease of the kidney or ureter. If we reject all plates which do not show the outline of the psoas muscles and the transverse processes of the lumbar vertebrae, and look with suspicion on all shadows which do not have well defined edges, it seems that error would be reduced to a minimum. The author was unable to report any recoveries after the operation of decapsulation for chronic nephritis, out of ten decapsulations on five patients. He closes with the report of six cases of traumatism, and says there may be extensive injury to the kidneys with but slight local or general symptoms, having been led to adopt the rule, therefore, that all cases of severe contusion of the flank with hematuria should be immediately explored.

Operations on the Lower Ends of the Ureters by the Inguinal Extraperitoneal Route Under Local Anesthesia (Cocaine).—SAMPSON (*Annals of Surgery*, February, 1905).—Four operations on three patients by this method are reported, the author using Schleich's infiltration. Although the operations lasted from four hours and thirty minutes to six hours and ten minutes, its only apparent effect aside from the postural discomfort, and at times some pain, was that of fatigue as from a similar length of time spent in a dentist's chair. Pinching, cutting and suturing the ureter in these cases apparently did not cause any pain, and similar treatment of the bladder in one case was painless, but painful in another. Closing the abdominal wound was the most painful step in all four operations. The author finds the extraperitoneal route a very satisfactory way of reaching the lower ends of the ureters. He recommends local anesthesia for those cases in which a general anesthetic would not be desirable.

Bladder Segregators.—In the December, 1904, issue of the *Ann. des Mal. des Org. Urin.*, a new vesical segregator is illustrated and described by Boddaert. The instrument in its distal end very much resembles the curve of the urinary sound. This is covered for several inches by a rubber cot. The principle involved consists in projecting this rubber partition downwards very much as in a Cathelin devisor, with the exception that the projected curve is much more firm than that in Cathelin's. The advantages of the instrument consist in its being graduated so that it may easily be applied to bladders of different sizes. It does not exert a large and brusque contact with the bladder as does Luys' segregator, and yet presents sufficient resistance so as not to be deformed, as often happens with the apparatus of Cathelin. It is easily introduced into men, a distinct advantage over that of Luys. Again, the exterior caliber of the devisor is only of a number 22 French. In the issue of the same journal, January 15, 1905, Luys takes up the challenge thrown down to him by Boddaert, and calls attention to the advantages of his own segregator, emphasizing certain disadvantages of those of Cathelin and Boddaert. In fact, he gives us a very able exposition of the subject of segregation, and attempts to answer in detail the objections of Boddaert. Boddaert claimed that the curve of the Luys' instrument, being uniform, rendered it inapplicable to bladders of small capacity. Luys replies that by his instrument a bladder of the capacity of thirty ounces has been successfully divided. The second criticism, that the contact of the Luys' separator upon the bladder is too large, seems unjustified to Luys, because it is just such contact that prevents the mixing of the two urines. In answer to the charge that the Luys' instrument is difficult of introduction with men, the author says that this does not hold, provided that the manœuvre which he recommends is executed. Luys says that in the Boddaert instrument the catheters which are to drain off the separate urines do not reach the bottom of the reservoirs made by the devisor, and as the fluid must collect until a certain height is reached, there is great danger of mixing of the two urines; whereas, in his own instrument the openings through which the separate urines are drained off always lie at the bottom of each reservoir, thus allowing no accumulation and no danger of mixing.

Conservative Perineal Prostatectomy—A Report of Fifty Cases.—YOUNG (*Jour. A. M. A.*, Feb. 4, 1905) speaks for the preservation of the urethra and the ejaculator ducts. Where the median lobe is pedunculated, sometimes it is necessary to use the index finger to make it present in the lateral opening and sometimes it may be impossible to deliver the median lobe through the lateral openings. In this case it may be enucleated from the urethral side. Preliminary treatment for very delicate patients is advocated. Preliminary cystoscopy is of great importance. Spinal cocaineization has proved of very great value in those cases in which, on account of old age or renal disease, ether or chloroform would be dangerous. The principles of the after-treatment consists in keeping the kidneys very active by means of water by mouth, subcutaneous infusions or rectal normal salt solution injections, in getting the patient up as soon as possible, in early removal of the gauze and tube drains and in avoidance of instrumentation; fifty cases with two deaths are reported. No case has been seen in which there is more than thirty-five c. c. residual urine after the operation. For those cases which have frequency of urination after operation, Young observes that there is diminished bladder capacity, and has obtained good results from forcible hydraulic dilatations. In several cases after prostatectomy spermatozoa have been found in the ejaculative fluid, in two cases the spermatozoa being actively motile. From such answers as Young has obtained from some of his operative cases he thinks the prospect is very good for obtaining a high percentage in the preservation of the sexual *puissance* by the technique that he employs. In three cases perineal fistula still persists. Four cases of rectal fistulae are reported, in two of which the author is sure no tear was made into the rectum at the time of operation. However, in the last twenty-five cases the separated levator muscles have been stitched together in front of the rectum to avoid this complication, and no fistulae have occurred. In some cases after removal of the perineal tubes slight incontinence may persist for a while, but in only two has this persisted after an interval of seven months, and this only when the bladder is full of urine. In one case only is there a persistent slight incontinence, but by wearing a small pad beneath a jock-strap the patient avoids wetting his clothes. Epididymitis occurred in six cases.

The Diagnosis of Renal and Ureteral Calculi.—FOWLER (*Med. Rec.*, February 4, 1905).—It is of the greatest importance to take a full, complete and satisfactory history, for we are too prone to slide over this important detail and the patient never remembers to tell us all his symptoms, sometimes omitting points of greatest significance. It is rare that stones in the kidney may be palpated, but is not uncommon by rectal or vaginal touch to locate a calculus in the lower end of the ureter. Tenderness along the ureter upon deep palpation is a suggestive sign. In those cases in which the urine is not infected the examination of the urine between the attacks may be negative. When the urine contains a large amount of pus or blood, or both, we have to exclude tuberculosis by a search for the tubercle bacilli. Cystoscopic examination in cases of suspected calculi is well nigh indispensable. We may in this way detect the absence or presence of vesical involvement, note the difference in the two sides of the trigone, the presence of ureteral calculus at

its vesical orifice, and in cases of pyuria and hæmaturia we may observe which kidney, if the disease is unilateral, harbors the foreign body. The ureter catheter will help us not only in locating strictures of the ureter, due to stone, but by it we may determine the work which a kidney, the seat of calculus disease, is doing. The value of the x-ray examination depends largely upon the weight of the patient and the experience and skill of the examiner. After all, there are certain cases that will require an exploratory incision for diagnosis. It is by early surgical interference that we can save the kidney and give the patient the opportunity for a perfect cure.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

MARTIN F. ENGMAN, M. D.

Treatment of Port Wine Nevus by Radium Bromide.—T. J. P. HARTIGAN (*Brit. Jour. Dermat.*, December, 1904).—The patient, a woman aged twenty-six, was born with a large port wine nevus covering the left cheek and left side of the nose. It was a reddish color with slight purplish tinge, and near the margin of the orbit there were a few dilated vessels. The disfigurement was very marked. Having a personal experience of the dermatitis following the application of radium on the healthy skin and noticing its effects on diseased skin, the author was of the opinion that by prolonged reaction there could be produced an obliteration of the vessels, thus removing what has hitherto been regarded as an irremediable deformity. The specimens of radium used weighed ten grams each, and were of the highest known radio-activity. Usually within twenty-four hours erythema and a slight prickling sensation and vesicles appear. These drying up leave a scab, which falls off in a week or ten days, leaving behind it a thin, white skin. In this way the patient was treated, the applications extending over nine months, during which time she had thirty-nine exposures in all, varying in duration from one-half to one hour. The improvement was marked. At the date of the article there was comparatively little to be seen; with the exception of a few small untreated areas, the deformity has entirely disappeared. The condition that formerly existed cannot now be traced, and the result, in the opinion of the gentlemen who saw the case, was that "it was considered distinctly encouraging."

Leprosy in Jamaica.—E. GRAHAM LITTLE, M. D. (*Brit. Jour. Dermat.*, December, 1904).—In the leper home the treatment pursued is chiefly on hygienic and general principles. Subcutaneous injections of solution of soluble salts of mercury is favored. All cases are more or less improved by its use, especially the anesthetic type. Chalmooogra oil, both internally and by injection, is also used. The first process is very difficult to follow for any length of time, owing to the nausea and dyspepsia it causes. Injections promise better results.

Treatment of Nevus by X-Rays.—J. R. LEVACK (*Brit. Jour. Dermat.*, February, 1905).—The writer here describes three cases of nevus flammeus (port wine stain), in which treatment by the x-rays was adopted and gave successful results.

Case 1 was that of a girl aged eight years, with a large nevus occupying the left side of the face from the temple down to the upper lip. A patch one and a half inches in diameter was first treated, the rest of the face being protected. Daily sittings of ten minutes each were given. A 10-inch spark coil, worked from the accumulator, with a hammer-break interruptor and a soft tube, were used. After three weeks of this no reaction was obtained, so an electrolytic interrupter was substituted, and the current from the main employed so as to give 100 volts and 7 amperes. Daily sittings of three minutes set up a violent reaction in a fortnight, with edema and vesication, and the skin peeled off. The raw, bleeding surface healed very slowly, and when the patient returned three months later the part was completely healed and free from nevus. The rest of the nevus was treated subsequently in the same fashion in two sittings, and the result was equally satisfactory. The writer advises that the whole of the nevus should be treated at once, instead of piecemeal.

Case 2 was that of a woman aged thirty-eight years, who had a nevus on the left half of the upper lip, which extended in isolated spots on the naso-labial fold and the lower eyelid. The main portion was treated as above, and reaction produced as above in about six weeks, the outlying islands being treated by the electro-cautery. The result was satisfactory.

Case 3 was that of a woman aged fifty-four years, with a nevus about one and a half inches in diameter, situated on the left malar prominence, dusky red in color, and raised above the level of the surrounding skin. There was another patch on the right ala nasi, and one on the back of the left wrist. This case was also successfully treated.

The Use of Adrenalin Chloride in Hemorrhages and Angio-Neurotic Diseases of the Skin.—GRANVILLE MCGOWAN, M. D., (*Jour. of Cutaneous Diseases*, February, 1905).—The writer has used this preparation quite extensively in genito-urinary conditions, and in hemorrhages of the skin, due to arteriosclerosis, the drug has proved successful. In other diseases of the skin he has tried the drug experimentally, and, it seemed to him, with great benefit in angio-neurotic conditions, and especially in chronic urticaria. He reports a number of very interesting cases, and recommends much larger doses than is usually prescribed.

Treatment of Syphilis on the Continent.—Major C. E. POLLOCK (*Brit. Jour. Dermatology*, January, 1905).—The author recently had the opportunity of visiting some of the leading dermatological clinics on the Continent (Europe) and of observing methods of treatment there employed.

Paris.—The great majority of out-patients were treated by means of pills, and almost everywhere the green iodide of mercury was the preparation employed. A few were treated by injections, but this method

did not seem to be popular. Patients in the hospital were treated mostly by injections, a great variety of preparations being used, but there seemed to be a distinct preference for the soluble salts.

Italy.—In civil practice injection is the method most commonly employed, while the military hospitals make use of inunctions. In injections the preparation most used was the sublimate at Rome and calomel at Milan. The general plan of treatment was to give distinct courses of mercury, separated by intervals at least twice as long as the period of treatment. The whole course lasted from three to five years.

Germany and Austria.—The plan of treatment most generally followed was the chronic intermittent one. Some, however, belong to the systemic school, that is, they only ordered mercury when syphilis manifested itself. The most popular method of treating syphilis in Germany was by inunction with mercurial ointment, three to five grams of unguentum cinereum was rubbed in for forty to fifty days. Injection treatment is also largely employed. The insoluble salicylate sublimate and gray oil were the preparations most generally used. The internal treatment by pills and mixtures was not looked on with favor.

Brussels, Copenhagen.—In these cities the general plan of treatment was on much the same lines as in Germany.

Stockholm.—The most interesting treatment here was Welander's sack treatment. As soon as the diagnosis of syphilis was made he gave three or four injections of his mercurial oil to get the patient rapidly under the influence of mercury. The remainder of his course was carried out by the sack treatment. In adults it was applied as follows: A cotton bag was made sufficiently large to cover the whole front of the chest, the upper end being left open. Each morning this bag was turned inside out and ten grams of unguentum cinereum (containing about fifty-three grains of metallic mercury), was rubbed into the side of the bag which was to be worn next to the skin; the bag was then turned back again and the patient wore it for the following twenty-four hours. This treatment was carried out for forty to sixty days, and was repeated at subsequent intervals just as in the case of courses by inunction or injection. For infants suffering from congenital syphilis one gram was rubbed in daily. For pregnant women and infants suffering from syphilis this method seemed especially suitable. Cases under treatment by this method seemed to be progressing very satisfactorily.

St. Petersburg.—Patients in hospitals were largely treated by inunctions, out-patients receiving injections of the insoluble salicylate.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

The Extraction of Cataract; Choice of Operation Based Upon Intraocular Conditions.—S. D. RISLEY (*Am. Med.*, February 18, 1905).—The author believes that no eye in which the lens becomes opaque, can, strictly speaking, be deemed free from disease. Close questioning of the patient will often disclose the fact that, during the stage of incipency, signs indicative of asthenopia were present, these signs disappearing as near work becomes impossible with the increase in the opacity. In the earlier stages, when the eyeground is still visible, changes in the latter and alterations of the vitreous can often be determined. *A priori*, it would be expected that the avascular lens and vitreous would be the first ocular structures to suffer from sclerosis of the vascular tree arising out of the gouty or rheumatic diathesis, and such, in fact, is the case. If the condition of the choroid and vitreous of one eye with incipient lens changes suggests disease, extraction of the lens in the opposite eye should be deferred until appropriate internal treatment has improved the intraocular conditions.

Dr. Risley believes that simple extraction is positively contraindicated where the lens is of a dull grey or amber color, or partially translucent. Such a condition of the lens is usually associated with a lack-lustre iris, the pupil reacting sluggishly to light. Such cases should be operated by the combined method. After operation, atropin should be freely used, as these cases are especially prone to develop iritis.

For other cases, the writer has found extraction within the capsule or by the ordinary method equally satisfactory. Free irrigation of the anterior chamber is deemed the best method of removing masses of grey cortex.

Secondary capsulotomies are made with two spear-shaped knives introduced at opposite sides of the cornea. These are made to perforate the membrane at the same place, are then separated simultaneously, thus avoiding traction on the ciliary processes. If iritis should complicate the healing, Risley advocates full doses of salicylic acid internally.

Cure of Trachoma by Radium.—COHN (*La Clin. Ophthalm.*, January 10, 1905).—The granulations of trachoma and follicular conjunctivitis are brushed daily with a tube containing one milligram of bromide of radium. The seances last from ten to fifteen minutes. The effects are similar to the application of x-rays, viz., rapid disappearance of the granulations, painlessness, and recovery without complications.

Optic Neuritis During Lactation, Including a Reference to Other Ocular Conditions Observed at this Period.—G. S. DERBY (*Arch. of Ophthalm.*, January, 1905).—Various ocular conditions have been ascribed to lactation by authors during the past century. The conditions include,

among others, conjunctivitis, blepharitis, mild keratitis, herpes, chorioiditis, cataract, iritis, dacryoadenitis, nyctalopia, paralysis of the ocular muscles. Of more importance is the occasional occurrence of optic neuritis, coming on during the secretion of milk or after protracted nursing.

Derby's case occurred in a primipara twenty-five years of age with a healthy nursing baby of seven weeks. Two weeks prior to the first observation vision had begun to fail in the left eye, accompanied by frontal headache, most marked on the left side. Vision reduced to finger counting. Ophthalmoscopically, the disc was generally hyperemic, with blurred outlines. Visual field contracted, and the color vision in abeyance. Emmetropic refraction (under hematropin). One month later the vision in the right eye had failed to six-twelfths, but without ophthalmoscopic signs, whereas the vision in the left eye had returned to normal, with normal field and good color perception.

The author summarizes fourteen recent cases, reported in full, and includes a consideration, as a basis for his deductions, of ten others, in which the records are less complete. The average age is twenty-nine. The subjects are usually strong, healthy women, without history of previous ocular trouble. The first appearance of ocular symptoms may antedate the birth of the child or may be delayed until the child is a year old. Primiparae or pluriparae are attacked with equal frequency. The establishment of the milk secretion, not actual nursing, seems to be the important factor in the production of the disease. In two of the reported cases the onset of the disease was coincident with the suppression of the milk secretion.

The disease is usually bilateral, either a papillitis (which occasionally may be severe) or a retrobulbar neuritis, in which case there is no visible ophthalmoscopic sign. Vision is usually rapidly and greatly impaired, but in the end tends to regain its normal acuteness, notwithstanding the development of atrophic changes in the optic nerve head. The visual field is contracted, and in the retrobulbar types there is a central scotoma. Succeeding pregnancies are apt to be attended by a recurrence. A conspicuous symptom is the frontal headache, which may be very severe. There is also localized pain in the orbit as well as pain on deep pressure. General symptoms, as chills, fever, vomiting, etc., have been observed in cases where suppression of milk occurs. Ocular paralysis and polyneuritis have been observed.

The most probable etiologic moment is an autointoxication from toxalbumins dependent for their formation on the secretion of milk.

Intermittent Exophthalmus, with Report of a Case.—W. C. POSEY (*Jour. A. M. A.*, February 13, 1905).—Posey's patient was a young man whose left eye was first noticed to protrude on stooping over at the age of four. The tendency to proptosis was notably increased after a fall on the head at the age of twelve. Of late years the patient could cause the eye to bulge forward by simply holding his breath.

When sitting quietly in a chair, the facial and ocular appearance of the patient is normal. Bowing the head forward, holding the breath, or if pressure is exerted on the jugular vein, the left eye pushes forward in the axis of the orbit. During the proptosis the upper lid droops and

the lower lid falls away, so that the tarso-orbital sulcus is obliterated. At the same time the superficial veins about the orbit become much distended. As soon as pressure is removed the globe rapidly recedes. Pressure on the globe seems to make the eye drop farther back in the orbit than is normally the case. During proptosis the retinal vessels become fuller, and visual acuity is slightly impaired.

When the patient holds his breath, the heart beats are slowed, and finally cease, this arrest lasting fifteen seconds. This is followed by a very rapid rate. The neck becomes much enlarged. At the same time the mucous membrane on the left side of the nose becomes abnormally hyperemic. By transillumination both antra are seen to be clear, but the light disappears from the upper half of the face during the time the patient holds his breath.

A careful search of the literature has revealed only thirty-nine similar cases. Usually the globe can be advanced from ten to fifteen mm. Occasionally a venous tumor, either behind or alongside of the globe can be seen and felt. Although no autopsy has been obtained in any case, it is probable that the condition is primarily caused by orbital varicosities. Secondary contributing factors are the absorption of the orbital fat and looseness of the fascia. The disease is more frequent in males, and is either congenital or is first manifested in childhood when great physical force is exerted. The prognosis is good. In the present state of our ignorance regarding the pathology of the affection, no operative treatment should be considered. Care to avoid strain, rest in the recumbent posture and a pressure bandage are advised.

SOCIETY PROCEEDINGS.

ST. LOUIS SURGICAL SOCIETY.

Meeting February 8, 1905.

EXOPHTHALMIC GOITRE.

Dr. H. Tuholske read a paper with the above title, for which see page 239.

DISCUSSION.

Dr. E. F. Tiedemann said our knowledge of Basedow's disease is very unsatisfactory. Very little was definitely known about the disease, and the essayist had mentioned in his paper about all that could be said on the subject. Not even the cause of the disease was known. Two theories had been advanced; one that it was a neurosis, and the other that it was primarily an affection of the thyroid gland, but what caused the affection in the gland was not known. It was only an assumption that it was a disease of the gland. Histological specimens did not show that there was an excessive secretion; they usually show a hyperplasia. In all cases of Basedow's disease and Graves' disease there was an enlargement of the thymus which had not been satisfactorily explained.

Dr. Lutz asked what was the condition of the vascular system.

Dr. Tiedemann said there was a hypertrophy of the muscular wall caused by the increased amount of work, a secondary condition to the hyperemia.

Dr. Lutz: What relationship does that bear to the well recognized disturbance of the vaso-dilators?

Dr. Tiedemann: The dilatation produces a hyperemia, and that causes a hypertrophy of the vessels.

Dr. Glasgow asked if the increase in the thymus gland had not been supposed to have something to do with the symptoms.

Dr. Tiedeman said this condition had never been explained, but it is always present.

Dr. Robert Luedeking said that Kocher, in his latest publication in "Die Grenzgebiete der Medicin und der Chirurgie," cited fifty-nine operations for Graves' disease, with forty-five recoveries and four deaths, the recoveries extending to the tachycardia, the tremor and gastro-intestinal disturbances. In some of the cases Kocher simply tied off the vessels, in others he resected both lobes in part, and in others but one lobe, seeming to have arrived at about the same favorable results in all of the forty-five cases. His aim was to eliminate the thyroid gland from the circulation as far as possible..

Referring to the medicinal treatment of Basedow's disease, the speaker said the drug treatment had about gone into bankruptcy. About the only means that could be employed were enforced rest, the application of cold to the heart and front of neck and galvanism; cardiac sedatives had been of no avail. It is a fact, however, that some cases get well without extraneous assistance. At the present time it was pretty well established that ex-ophtalmic goitre must be considered an intoxication; most forms of Graves' disease are due to a progressive growth and development of the thyroid gland. Cases of a neurotic character purely, get well of themselves or under the application of cold and galvanism; not so those due to true hyperplasia of the gland. The strong contrast between the condition of the gland in cases of myxedema and cretinism and in ex-ophtalmic goitre first suggested the idea that an over-activity of the gland was the cause, and suggested that extirpation of the gland could bring about relief. And it was experimentally shown that the ingestion of large amounts of the extract of the gland will produce symptoms identical with those of Graves' disease. Thyroid extract given

to a nursing mother has produced the phenomena of ex-ophthalmic goitre in the suckling infant.

Moebius first enunciated the theory of thyroid intoxication in these cases, and fell upon the idea of administering the serum of thyroidectomized dogs to such patients. He had a number of very successful results. In the same manner the blood serum of human beings afflicted with myxedema and cretinism was successfully employed. It was only a step to administer the milk of thyroidectomized animals to persons suffering with Graves' disease, and Lanz reported a series of successes. Quite recently Dr. Lademann reported a case of Graves' disease in a woman, in whom all the usual treatments had been tried, and a fatal issue seemed imminent. Milk from thyroidectomized goats was employed, and a favorable outcome resulted. The speaker believed we should pin our faith at the present day to the use of the serum of thyroidectomized animals or the milk of thyroidectomized goats, the latter method, perhaps, being more favorable. He mentioned a case which came under his observation and went to operation at his suggestion. The patient was a lady of sixty years, who had a large thyroid for thirty-five years and had raised a large family. She began to be troubled with circulatory disturbances, although the gland did not show any particular increase. Attacks of rapid heart action came on with dyspnoea, and the skin assumed a pigmentation much darker than before. She developed a paralysis of the left vocal chord. His judgment of the case was that the symptoms were due not so much to the toxic influence of the gland as to its mechanical influence from pressure on the pneumogastric and recurrent laryngeal nerve through tension in the gland. The gland was removed almost in its entirety, and the symptoms after removal were similar to those mentioned by the essayist, but on the fourth day after operation affairs began to right themselves, and today there is a normal state.

The milk treatment ought to be adopted in anticipation of a surgical intervention, and thus better surgical results assured.

Dr. Lutz asked why the speaker did not lay some stress upon resection of the sympathetic.

Dr. Luedeking said resection and section of the sympathetic had been departed from because no anatomical changes were found there and because results following this procedure had been extremely poor.

Dr. Tupper mentioned an article written by Sanderson in which that authority spoke of some interesting points in the therapeutics and also the probable exciting cause of the development of some of the symptoms in this disease. Sanderson had operated on a belly case, and at the time noticed no special evidences of ex-ophthalmic trouble. Soon after the operation the patient developed a marked tachycardia, the pulse running over two hundred per minute; coincident with this there were evidences of enlarged thyroid. It had never occurred to the speaker that this disease existed in a latent state requiring only some exciting cause to develop it, but Sanderson stated that it did so exist, and needed only some such operative procedure as mentioned to make it manifest. Sanderson attached a good deal of importance to therapeutic measures, and especially, in tachycardia, to a drug which the speaker had often used with good effect in other cardiac conditions, and that was *cactus grandiflora*. He had noticed a marked diminution in the heart beat after using this drug, when other preparations had failed to give results. Referring to excision of the ganglia, he mentioned a case of glaucoma in which he resected the superior cervical ganglia, but without any marked impression on the glaucoma, though there was some diminution in the tension of the eyeball and in the tachycardia that existed.

Dr. Glasgow called attention to the fact that almost all these cases of exophthalmic goitre are in women, and thought this was a matter of importance to consider. In women the vascular system is subject to perturbations not seen in men, and all cases of exophthalmic goitre increase in size during the menstrual period. There was a vascular plethora at that time. He had noticed this following the artificial menopause, and it was his custom to relieve this condition by bleeding. This condition seemed to prove

that there was some relation between the vascular system and the increase in the size of the thyroid. He would not be astonished to hear that this condition of plethora had something to do with the increase in the size of the thyroid, and possibly the secretion and the nervous symptoms following. He referred also to the old method of destroying the thyroid by the actual cautery and the galvanic current, and asked if this method was followed by good results. He had found that the administration of thyroid extract seemed to make them worse. The very fact that cases get well without the removal of the gland seemed to show that the trouble was not in the gland itself, and the cause must be outside of it, in the general system.

Dr. Dorsett mentioned the case of a girl about fifteen years of age who got well without operative interference. She was a nervous child, suffering a good deal with dysmenorrhea and developed exophthalmic goitre. Financial reverses forced her to seek employment and she took a position where she was compelled to be on her feet and she developed menorrhagia. He treated her with arsenic and strophanthus for over two years and she got well of the goitre.

Dr. Carson said his study of the literature in regard to excision of the sympathetic ganglion had impressed him with the idea that the operation had been devoid of results. He mentioned a case treated by Dr. Bliss in which all the symptoms were exaggerated. As the patient was in no condition to place in the hands of the surgeon Dr. Bliss tried therapeutic measures. He commenced with twelve drops of suprarenal extract several times a day and the symptoms steadily improved and today she was able to do housework. The exophthalmus had diminished steadily, the goitre also had diminished in size and she did not require any surgical interference.

Dr. Carson asked if any of the members had observed any relation between the mammary gland and enlarged goitre. He mentioned the case of a lady who consulted him and who had very prominent eyes, rapid pulse and quite a large goitre. Several months previously, while riding in a street car, a man dug his elbow into her breast, he being thrown against her by a lunge of the car. Following this a tumor developed and with it the appearance of a goitre and while the eyes had been prominent, this condition became increased. He found a tumor, apparently solid, about the size of a hen's egg and advised operation. At the operation tumor was found which proved to be a cyst filled with a dark fluid. After the operation the goitre diminished very decidedly and the exophthalmus disappeared. Another case was that of a man about thirty years of age, with a large tumor on the left side of the neck and symptoms of dyspnea; he took it to be an enlargement of the left lobe of the thyroid pressing upon the trachea, thus interfering with respiration. There was no exophthalmus, but the interesting point was that he found the breasts enlarged and somewhat indurated.

Dr. Tuholske said in closing that one of the objects of his paper, to get up a discussion on this important subject, had been accomplished, but the discussion had taken an unusually wide range, with the development of so many divergent views that the confusion which surrounded some parts of the subject had not been cleared up; on the contrary left confusion worse confounded. To somewhat clear up the matter, he desired again to emphasize the fact that exophthalmic goitre, the vascular goitre, was the subject of his remarks, and not a goitre grafted upon an otherwise diseased goitre, or the goitre of the endemic surroundings, but of the vascular goitre, the pathological anatomy of which he gave in the beginning of his paper, and of which the increased vascularity, due to the enlargement of the normally existing vessels and to vessels of new formation, was an important feature; the vascular form, of which Lushka says that the amount of blood carried through vascular goitre was equal to the amount of blood carried by the internal carotids. The results in the cases of vascular goitre quoted by Dr. Luedeking from Kocher's valuable and extensive paper in the *Grenzgebiete*, are gratifying and prove that the removal of half the gland, or half of the gland and the isthmus and ligation of the arteries, was the most logical procedure and this seemed to prove the position now generally taken that in exophthalmic goitre we are dealing with an over-activity of

thyroid glandular action and a hyper-secretion and its rapid delivery into the circulation. Many recent researches place the thyroid in intimate functional connection with the pituitary body and the suprarenal glands and that the medium of that connection is the sympathetic nerve. It seemed to be clear that over-secretion of the thyroid produced adrenal hyperactivity. At any rate adrenalin injected into the circulation produced vascular tension such as is the peculiarity of exophthalmic goitre. Furthermore, thyroid extract administered in exophthalmic goitre increased all of its symptoms just as does adrenalin injected in the same condition. In Dr. Carson's case in which the patient improved under the administration of adrenalin, we are forced to believe that from over-stimulation of the suprarenal glands by thyroid secretion, the period of exhaustion of suprarenal activity had arrived, as evidenced by every symptom of reduced blood pressure. At that stage, the adrenalin introduced would substitute suprarenal activity and act favorably until the suprarenal glands again began to functionate. In the case of Sanderson's in a valuable recent article the relationship of suprarenal insufficiency with thyroid over-activity was evidenced by the bronzed condition of the skin. This clearly points to suprarenal and not thyroid disease alone. If modern research be correct, the removal of both cervical sympathetics, their ganglia and connecting nerves, should produce a general decline of the patient. Jonnesco operated on the sympathetic for goitre, glaucoma and epilepsy. The removal of the superior ganglia alone, seemed to reduce the ocular tension in glaucoma, and the protruding eye in exophthalmic goitre. The other symptoms of exophthalmic goitre were not favorably influenced by that procedure. His statistics on his epileptic work, with that of goitre and glaucoma, showed that the operations were without mortality, but six of his epileptics died some little time later, a mortality infinitely greater than in epileptics not treated to bilateral removal of the cervical sympathetic. To Dr. Glasgow's question as to why destruction of the gland by cauterization as formerly practiced, was not a good procedure, Dr. Tuholske said he could not answer that question *ex-cathedra*, but from *a priori* reasoning, he would think that if removal of the thyroid was desirable, the knife would be infinitely more definite, cleaner and the extent of removal much more under control. Should the cautery affect more of the gland than designed, enough of the gland might be destroyed to produce the usual signs of thyroid inefficiency or absence, as myxedema, etc.

ST. LOUIS SURGICAL CLUB.

Meeting February 8, 1905.

THE TREATMENT OF APPENDICITIS.

Dr. Grant read a paper on this subject, for which see page 263.

DISCUSSION.

Dr. Jonas said that cases of appendicitis ordinarily are easily diagnosed, but at times cases are met with in which the diagnosis is rather difficult. He mentioned a case of Dr. Robertson's, who suspected that the patient had appendicitis, and when Dr. Jonas examined the case, he found a large infiltration on the left side, and a slight infiltration on the right side of the abdomen showed there had been trouble there before. He had seen many cases in women, where he was not quite clear as to whether the picture at the time of the examination was produced by appendicitis or by some acute ovarian trouble. The tissue around the ovary, and the tissue around the appendix are adjoining, and after an abscess has developed, it was, in his opinion impossible to say from which source the abscess comes. Gradually the pus flows down into the pelvis, and if

it then progresses from the right side to the other side of the pelvis, we have to deal with the same condition as in pronounced pelvic abscess. In regard to the last remarks of Dr. Grant, the speaker believed that, when called to see a case of acute appendicitis soon after the attack, an immediate operation is advisable, as since we may rightly hope in such a case, that we are in time to prevent peritonitis. If the patient has been troubled with appendicitis for sometime, and is growing worse, then an operation is indicated, but if the patient has started to improve, then operation should be deferred until we see whether the patient will not get over the attack without interfering, giving opportunity for operation in the interval. If there is a pronounced abscess in the region of the appendix, there is no doubt that the pus should be evacuated. But how shall we treat the appendix in such a case? If it comes right into view, it should be cut out, but long hunting for the appendix is not advisable, as in so doing, the operator might break through some of the thin adhesions and endanger the life of the patient by producing peritonitis. Therefore if the appendix is not found easily, it would be advisable only to empty the abscess, and then after a few days to make a new incision, just as though the first incision had never been made, and remove the appendix. The speaker considered these operations for removing the appendix as being almost without danger.

Dr. Dixon was sorry the essayist had left out all reference to blood examination, as he hoped the question of leucocyte count would be taken up.

Cabot holds that the leucocyte count goes for very little, as, if the leucocytosis is high, we cannot say that it is a severe case of appendicitis because of that fact alone, nor if the leucocytes are almost normal can we say that it is a severe case of appendicitis, or that it is a light attack. Neither was there anything said as to the condition of the skin in the location of the appendix, or in the abdominal region, either anterior or posterior. Sheren, in his report of cases, gives a number in which there is an anesthetic condition of the skin, and as that obtains, it points to a severity of the case, either to a gangrene or to a rupture of the appendix.

In regard to saying whether it was the first attack, or second or third attack, the doctor thought this a very difficult thing to do. To say to a person when seen, that it is the first attack he has ever had, would be precluding all slight attacks. It is well known that infants, up to six months have been operated upon for appendicitis. It is now claimed by some that the different attacks of colic (indigestion so-called) are nothing more than slight attacks of appendicitis.

The location of pain was not always in the region of McBurney's point or in the right iliac-fossa. In regard to the question of when to operate, it was his belief that so soon as the diagnosis of appendicitis had been made, an operation should be insisted upon. We cannot tell when it is going to cause a perforation or when general peritonitis will follow, and the life of the patient be very much endangered. We cannot tell by the blood count that it is severe or that it is not a severe case. As soon as the diagnosis of appendicitis is made, then, the sooner the operation is over, the sooner the patient is out of danger.

Dr. Clopton, referring to ulceration of the mucosa of the appendix, healing and eventually obliterating the lumen, finally curing the disease, might be true, so far as infectious complications are concerned, but there was a distinct entity as annoying in itself as any acute attack, and that was obliterative appendicitis. The few cases of obliterative appendicitis that he had seen were as disturbing to the patient's general nutrition as any mild abdominal case could be.

Destruction of the mucous membrane had frequently been observed to the extent of two or three inches. He did not believe it was a cure when the mucous membrane was destroyed. He had seen cases where the symptoms were so very indefinite as to lead one to suspect the trouble to be in the kidney, gall bladder or appendix, but after the removal of the appendix, frequently the cases were entirely cured. The speaker did not think he had ever seen an appendix removed too soon, but if the appendicitis

had passed the acute stage, it would be better to wait for the interim to operate. In his more recent observations Murphy, of Chicago, claimed to have saved twenty out of twenty-one cases of general peritonitis, by simply going into the pelvis and draining. This would indicate that a large number of peritonitis cases can be saved by this simple treatment.

Dr. Deutsch said that one point to be considered especially was that these cases were all from private practice, in distinction from cases which come from the charity hospitals, clinics, etc., who will stand more than patients in the higher walks of life and therefore gave a better clue as to how to handle cases in private practice. If we go by what the doctor had said we do not know much more than we did before as to the exact plan to adopt. We do not get at the bottom of the subject by studying stated cases, which individually decide nothing. They should be classified to show such cases where the patient was opposed to operation. By doing this it would be possible to gather statistics showing what the operation does for this class of cases. He recalled that one doctor made it a rule not to interfere until absolutely necessary, but had some bad results and then began treating on the theory that operation should be performed at once. His conclusions were based largely on studies of reports, and while he was quite successful the speaker did not think this a correct basis. The right way was to get men in private practice to give the results of their experience in the treatment of one hundred cases or more.

Dr. Robertson believed in the conservative treatment, and did not believe in operating upon all cases. Appendicitis cannot always be positively diagnosed when first seen, and if we go on the theory that we must operate upon all cases, we would operate on a lot of stomach-aches!

Dr. Kirchner considered it was best to operate at once; but if seen after twenty-four hours, and still acute, it was better to wait, put the patient on starvation diet, and not give purgatives unless specially indicated. There is also some danger, he believed, in giving enemas that are too large; they should be small, because there is then less danger of starting trouble if there is an abscess or if the attack is acute. Certain reports that the doctor had seen stated, that the best results were those where the operation was in the interim, and the next best results were those in which the operation was during the first period, and the worst results were those made after forty-eight hours, if the symptoms of the attack be still acute. From statistics he believed that if the cases were not seen during the first period, it would be better to put them on starvation treatment and watch, and if they continued to get worse, operate at once.

When cases are opened it may be advisable to do some exploring, for pus has a tendency to gravitate into the pelvic cavity, and the appendix, if accessible, removed; but it was dangerous to search long for it.

The speaker did not agree that there was always sensitiveness at McBurney's point. If the appendix becomes gangrenous there will be little pain. But pain may also be referred. For instance, if the pus is spreading in the pelvic cavity, then pain will sometimes occur more distinctly on the left side than on the right. This also may be true of certain cases where there is tubal trouble connected with the appendix.

Dr. Dixon said that if we could tell for a certainty the case is doing well on the second, third or fourth day, and could positively say that it would continue to do well, the surgeon would be safe in deferring the operation. Provided the patient was so situated, we could operate at a moment's warning. In an attack where the case is progressing well and the condition is satisfactory, we cannot say that it is not going to change in six or twelve hours, or even sooner.

In closing the discussion, Dr. Grant stated that Dr. Deutch had given the reasons for writing the paper. He wanted to report his private cases only. These were cases that he had seen from the beginning to the termination of the disease, and would show the results of the conservative treatment. In 1900 the conservative treatment gave him

three deaths consecutively. The conservative treatment was modified, so far as he was concerned. In private practice he found this trouble; that when a diagnosis of appendicitis is made and an operation is suggested, many patients will not hear of it. In the paper five deaths were reported, and in three of these cases he had advised operation.

Dr. Jonas believed that the difference between the frequency with which this disease occurs in the male and in the female is to be accounted for by the greater blood supply to the appendix in the female subject. With reference to the suggestion that appendicitis was not dangerous, the speaker quoted the words of a noted Berlin surgeon who, when the statement that people never died of appendicitis was made, retorted that they never die of appendicitis if we do not count along the consequences: peritonitis and all metastatic troubles.

PRESENTATION OF SPECIMENS.

Dr. Jonas presented a specimen of Typical Fibroma of the Mammary, and a specimen of Multiple Sarcoma.

BOOK REVIEWS.

LEITFADEN FÜR MEDICINISCH-CHEMISCHE KURSE. VON DR. A. KOSSEL.
Heidelberg. Fifth revised edition. 1904. G. E. Stechert, New York.

This little brochure of seventy pages is recognized in Germany as one of the best guides for the beginner in inorganic and organic chemistry. It is specially designed for the student of medicine, and contains the information necessary for a "working knowledge" of physiological chemistry.

HYPERÆMIE ALS HEILMITTEL. VON PROFESSOR DR. AUGUST BIER, in
Greifswald. Mit 10 Abbildungen. Leipzig, Verlag von F. C. W. Vogel. 1903.

This very neat volume of 220 pages, 8 mo., is devoted to a subject which this author more than any other man, has the honor of having introduced into surgery. The principle of treating joint and other inflammatory affections by hyperæmia is, now that Bier's successes are well known, an established procedure. After the introduction, the opening division of the book deals with the different forms of hyperæmia, and with the various means of producing it. The next division treats of the various ways in which hyperæmia is beneficial. The third division informs us how to treat with hyperæmia the different parts of the body as well as how to treat many pathological processes with the same. This volume deserves special consideration as being the standard treatise on this subject.

INTERNATIONAL CLINICS—A QUARTERLY OF ILLUSTRATED CLINICAL LECTURES ON ESPECIALLY PREPARED ORIGINAL ARTICLES. Edited by A. O. J. KELLY. Volume IV. Thirteenth series. 1904. J. B. Lippincott Company, Philadelphia.

This volume is devoted to a series of papers by well known authors on treatment, medicine, surgery, gynecology and obstetrics, neurology, orthopedics, ophthalmology, pathology. Among the contributors on their respective branches are Tyson, Musser, Keen, Senn, Dugan and others of equal renown. The papers contain in a condensed form the essential points on the subjects in hand, gleaned by the authors from the literature and their own observations.

MANUAL OF CLINICAL MICROSCOPY AND CHEMISTRY. BY DR. HERMANN LEHNHARTZ. Authorized translation from the fourth and last German edition, with notes and additions by Henry T. Brooks, M. D., with 148 illustrations in the text and nine colored plates. F. A. Davis Company, Philadelphia. 1904.

We now have many excellent works upon clinical chemistry and microscopy. The subject matter of all is very similar, so that the chief point of difference is in the classification and arrangement thereof. The chief value of this little work of four hundred pages lies in its excellent arrangement, its splendid cuts, its conciseness and its general simplicity. It is needless to add that the subject matter is in every sense reliable and up to date. Lehnhartz's connection with the Leipzig clinic since 1879, and his close application to laboratory methods, has made him an absolute authority on the subject. The translator has made many valuable additions to the work where he has deemed them necessary. These additions have been intended chiefly to emphasize "points in examinations which might at first glance seem self-evident." The most important additions to this volume by the author have been the sections on the molecular concentration of the blood and urine (cryoscopy), the bacillus dysenteriae (Shiga), the paratyphoid bacillus, a new method for staining the blood, and addenda to the section on the Widal reaction.

A TEXT-BOOK OF PHYSIOLOGY. By ISAAC OTT, A. M., M. D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. With 137 illustrations. Royal octavo, 563 pages. Bound in extra cloth. Price, \$3.00 net. F. A. Davis Company, publishers, 1914-16 Cherry street, Philadelphia, Pennsylvania.

It was the author's aim to embody in this work those chief facts of physiology, a knowledge of which is indispensable in the study of pathology and medicine in general. The author has well succeeded, and presents a book which seems exceptionally adapted to the needs of the student.

HAND-BOOK OF THE ANATOMY AND DISEASES OF THE EYE AND EAR. For Students and Practitioners. By D. B. ST. JOHN ROOSA, M. D., LL.D., Professor of Diseases of the Eye and Ear in the New York Post-graduate Medical School, and A. EDWARD DAVIS, A. M., M. D., Professor of Diseases of the Eye in the New York Post-graduate Medical School. Price, extra cloth, \$1.00, net. F. A. Davis Company, publishers, Philadelphia.

Within the compass of this little manual there is contained a really remarkable amount of authoritative information on the principles of treatment and anatomy of the eye and ear. It was designed by the authors to furnish a ready means of corroborating and amplifying what is seen by the student in his daily clinical work.

The information supplied is, generally speaking, up to date and in accord with the present status of ophthalmic and aural opinion. We must take issue, however, with the teaching that a cycloplegic is unnecessary in the majority of cases of refraction. It may often be necessary to modify the refractive findings with the accommodation paralyzed, but as the starting point for such modification we should accept the static refraction.

THE EYE: ITS REFRACTION AND DISEASES. By EDWARD E. GIBBONS, M. D., Assistant Surgeon of the Presbyterian Eye, Ear and Throat Hospital; Demonstrator and Chief of Clinic of the Eye and Ear Diseases in the University of Maryland, Baltimore. 472 pages, small quarto. Cloth, \$5.00; half morocco, \$6.50, net. The McMillan Co., New York.

In its completed form this work will consist of two volumes, of which the first, dealing with refraction, is the subject of the present review. By a curious oversight the fact that the work will be in two volumes is not mentioned, either on the title page or elsewhere, and the casual reader will wonder why "Diseases" are mentioned at all. The present volume consists of twenty-eight chapters, beginning with a consideration of "Light, Its Propagation and Refraction," and ending with "Spectacles and Nose-Glass Fitting and the Neutralization of Lenses." So much of physics involved as is required for a proper understanding of optics is included. The author has been at pains to clarify the subject for the benefit of the reader whose knowledge of mathematics is limited, and in pursuance of this object has greatly simplified the deductions of the various formulæ. The diagrams are well drawn and very materially aid in elucidating the text. For a work published so recently, it is rather curious that no mention is made of the electric ophthalmoscope and retinoscope. In the chapter on "Visual Acuity and Accommodation" we are told that "the picture cards intended for children too young to read are not reliable, as it is almost impossible to make the pictures conform with the usual standard of acute vision." The author shows his unfamiliarity with the beautiful Universal Test Characters of Ewing, which (with insignificant variations) are drawn exactly to the Snellen scale. In a book containing so many mathematical formulæ it is surprising to find so few typographical errors. The index is well arranged and complete.

DESCRIPTION OF THE PLATE.

The plate is a tri-color reproduction of a water-color composite picture of the blood of a patient suffering from double tertian malaria, with the addition of a crescent from a case of double tertian with associated aestivo-autumnal malaria.

The blood was taken during a paroxysm, and all the figures, except o, p, r, x, y, z and bb, represent a few of the characteristic organisms and cells found under a three-quarter inch circle cover glass; the others, except bb, were from films taken from the same patient at the same time, the organisms being abundant in various stages of development. The blood was stained with the titrated eosin methylene blue stain described, and the figures were outlined with a camera lucida, Reichert microscope. They represent a magnification of about 1400x.

a. Young organisms free in the blood, the cytoplasm blue, the chromatin or nucleus red.

b, c, d and e. Early stages of development in the red blood cells, so-called ring forms.

f, g, h and i. Later stages of development, distinct enlargement of the invaded cells, which stain less intensely, beginning of granular degeneration of the red cells, also appearance of the pigment of the organisms.

j. Adult organism, pigment abundant and scattered, nucleus beginning to divide.

k. Adult organism, pigment scattered, nucleus divided and distributed through the organism.

l. Organism undergoing segmentation, nuclei in the segments, pigment collected in the lower part of the organism.

m. Rosette appearance of the segmenting organism, pigment collected in the center.

n. Organism showing segmentation complete, young organisms and pigment being liberated from the ruptured red cell.

o. Crushed red cell containing an organism, the granules of the degenerating red cell scattered.

p. Adult organism free in the blood.

y. Intracellular flagellum.

z. Extracellular flagellum.

d. Young organism with two nuclei.

f. Red cells invaded by two organisms each.

q. Neutrophilic leucocyte, intensely stained nuclei, neutrophilic granulation of cytoplasm, granules small and irregular, a mass of malarial pigment in the cell to the left of the nucleus.

r. Mast cell, feebly stained nucleus, basophilic granulation of cytoplasm, granules large and deeply stained.

s. Eosinophile, intensely stained nuclei, eosinophilic granulation of cytoplasm, granules spherical.

t. Crushed neutrophilic leucocyte, scattered chromatin and granules.

u. Lymphocyte, intensely stained nucleus, light blue nongranular cytoplasm.

v. Large mononuclear cell, moderately stained nucleus, neutral, somewhat granular appearance of cytoplasm.

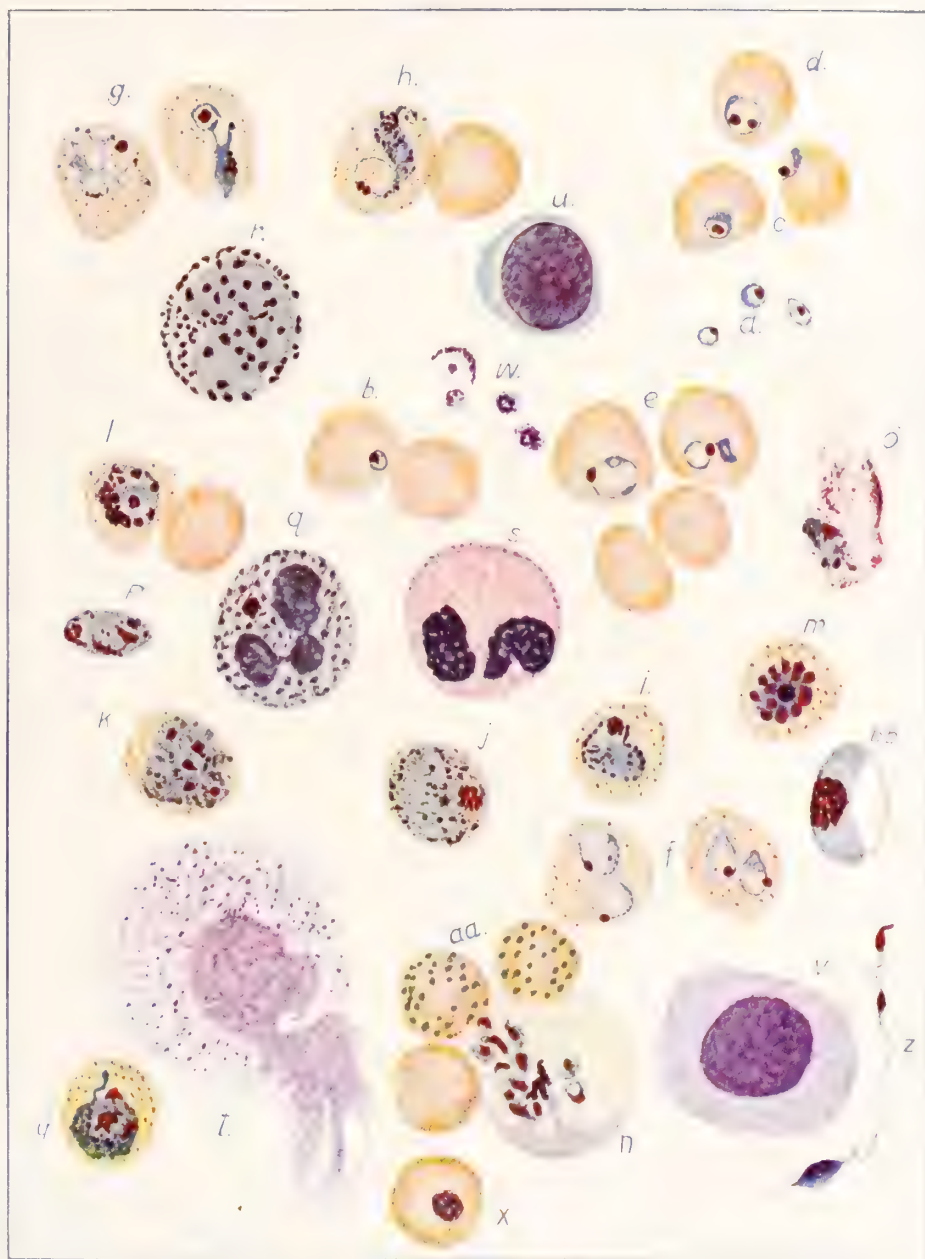
w. Blood plates, indefinite trabecular structure, various sizes and shapes.

x. Blood plate lying upon a red cell.

aa. Red cells showing blue granulation incident to anemia.

bb. Red cell containing a crescent, only a trace of the red cell remaining, the reddish nucleus of the crescent showing through the scattered pigment in the center of the blue organism.

Several normal red cells are shown unlettered.



A.B. Streeter, Jr.

MALARIA BLOOD

INTERSTATE MEDICAL JOURNAL.

VOL. XII.

APRIL, 1905.

No. 4.

ORIGINAL ARTICLES.

A REVIEW OF METHYLENE BLUE EOSIN BLOOD STAIN, AND A REPORT OF SOME MODIFICATIONS IN METHOD OF PREPARATION, WITH ILLUSTRATION.

BY GEORGE C. CRANDALL, B. S., M. D., of St Louis,

PROFESSOR OF INTERNAL MEDICINE, MEDICAL DEPARTMENT, ST. LOUIS UNIVERSITY.

One of the most important clinical observations we make is the condition of the blood, which, on account of the delicate technique required, is often neglected or made in such a cursory manner as to afford little or no valuable information. The microscopic examination of fresh blood is of clinical value in ascertaining the number of red and white cells; also, in part, the general condition of the red cells, and it *may* show the presence of blood parasites as malarial organisms, filaria, etc.; but, as a rule, the most accurate information requires a well-made, well-stained blood film, showing the histologic and pathologic elements so clearly defined that they may be readily recognized. This can be accomplished only by the use of a good differential stain, and that which is attracting most attention for general blood work is some combination of methylene blue and eosin, which has undergone various methods of preparation during the past decade.

The principle on which this stain is made is that originally demonstrated by Ehrlich, viz.: that it is possible by the combination of aqueous solutions of basic and acid aniline stains to form neutral stains. Thus, the methylene blue forms the base and the eosin the acid of the neutral stain called an eosinate of methylene blue. In its application to cell structure the neutral stain stains the neutral elements of the cell which are not well stained by either component of the neutral stain if used alone; the acid elements of the cell select the basic component, and the basic elements select the acid component of the neutral stain.

Without going into the chemistry of the stain, it suffices to say that an oxidation product can be generated in the methylene blue solution called methylene azure or methylene red, which, being a chromatin stain, greatly enhances the value of the combined stain. Most of the methods of preparing methylene blue eosin stain have been modifications of the Romanowsky method, in that a polychrome or oxidized methylene

blue solution has been used: therefore I shall mention in review only some of the most important advances in the development of this stain, and add some modifications in method of preparation which I have found satisfactory.

Romanowsky used an alkaline methylene blue solution, which was allowed to stand until mould formed upon the surface, oxidizing some of the alkaline methylene blue into methylene azure. Of the methods preceding and succeeding Romanowsky's, those using any kind of oxidized alkaline methylene blue obtained some chromatin staining: the others were deficient in this regard.

Nocht isolated the methylene azure from polychrome methylene blue, and he (likewise Giemsa) used it in combination with eosin, the films requiring previous fixing and a considerable time for staining.

Jenner did not use an oxidized blue solution, but he was the first to use methyl alcohol as a solvent of the combined methylene blue and eosin, which obviated the necessity of previous fixation of the film, the fixing and staining being done at the same time in a few minutes.

Goldhorn and others found that heating the methylene blue solution over the water bath hastened the oxidation of the solution, thus greatly economizing time in preparation.

Leishman and Reuter found that the staining power of the alcoholic solution, especially as regards chromatin, was greatly increased by the addition of water to the stain on the blood film.

Wright made use of the Arnold sterilizer as a means of heating and rapidly oxidizing the methylene blue solution.

A few of the prepared staining solutions which I secured from different sources gave good staining reaction, but other samples obtained from the same sources gave quite indifferent results, and I have endeavored to ascertain the reason for such variations.

After numerous preparations of the stain during the past two years, I have found the following method uniformly satisfactory:

Prepare fresh solutions of the primary stains.

Methylene blue solution.

Sodium bicarbonate thoroughly dissolved in distilled water to make a one-half of 1 per cent. solution: to which add sufficient methylene blue to make 1 per cent. of the blue. Steam in Arnold sterilizer for one hour, then cool.

Eosin solution.

Make a one-tenth of 1 per cent. solution of yellowish aqueous eosin in distilled water.

Add the eosin solution to the methylene blue solution, stirring the mixture constantly, until about five parts of the eosin have been added to the blue: then begin testing the staining reaction of the mixture, in a sense titrating the stain and controlling the end reaction by the actual application of the stain to freshly-made blood films. This test is quite

easily made by filtering ten drops of the mixture through a small piece of filter paper, dry the residue on the paper and put it in a small test tube with about ten drops of pure methyl alcohol, agitate thoroughly to dissolve stain on filter, and with this stain a freshly-made blood film. This will give an index of the staining reaction, and more of the blue or eosin solution may be added until the test gives the desired results. A light pink color of the red cells in the thin areas of the film and a bluish color of the thick areas is most satisfactory, since with this color the other blood elements stain clearly; if the red cells are an intense pink the blue is over neutralized and the white cells and organisms do not stain well; if the red cells stain too blue there is not the contrast necessary to show clear definition of the other elements.

When the mixture is finished it should be filtered through filter paper and thoroughly air-dried, or dried over the flame at a distance easily borne by the hand. Make a saturated solution of the powder, about three-tenths of 1 per cent. in pure C. P. methyl alcohol, filter and add to the stain one-fourth more of the alcohol; or make a one-fourth of 1 per cent. solution of the residue in C. P. methyl alcohol and filter. Preserve in tightly corked bottles in the dark. Keep the bottle quiet when using, avoiding shaking, so as not to distribute through the solution any precipitate that may form.

In applying the stain filter ten drops directly upon the unfixed film; or use a pipette freshly rinsed in methyl alcohol, take ten drops of the stain from the center of the solution, put on the unfixed film; leave one minute, then add to the stain on the film one or two times as much distilled water as stain and leave two or three minutes more; wash quickly three to five seconds under strong stream of distilled water; dry promptly with blotter; then air-dry thoroughly or hold over flame at hand distance; mount in *pure* balsam. The entire procedure requires less than five minutes.

The film will vary somewhat in thickness, the color of the thin areas being light pink and that of the thick areas bluish.

It is preferable to make thin films on slides, which should be thoroughly cleaned and polished before using, and the blood should be transferred to the slide as soon as possible after the drop appears.

The lobe of the ear is the best site for taking the blood, and a Hagedorn needle excellent for puncturing the skin.

The thin films are usually preferable for blood examination as they give good detail of all the blood elements and parasites, but in examining for malaria if the parasites are few they may be more easily found by the Ross method; viz.: in taking the blood on the slide make a large moderately thick drop instead of a film, dry thoroughly, then allow a little distilled water to flow carefully over the blood and remain until the hæmoglobin is washed out of the red cells, leaving the blood whitish in color, pour off the water carefully; again dry thoroughly, and stain

the same as a film. The red cells do not stain, the white cells and blood plates stain fairly well, the organisms do not stain as well, but their pigment especially will appear distinct and they will be more abundant on account of the thick film, consequently the ease of finding them is relatively increased. This method is useful also in examining blood for bacteria.

The sooner the blood is stained after it is taken the better the staining reaction; films several days old will give good results, but the staining susceptibility deteriorates. Old films stain better if a little distilled water is allowed to flow carefully over the film, poured off quickly and dried just before staining.

As different samples of blood vary somewhat in alkalinity, so also will there be slight variations in the color reaction, but they do not impair the value of the stain, and may in some diseases prove of pathologic significance.

Slight variations in the amount of water added to the stain on the film, the length of time it remains, and the length of time it is washed may vary the tint somewhat, but with ordinary care uniform results will be obtained.

If the stain is kept quiet, slides thoroughly cleaned, films well spread, the stain not allowed to evaporate on any portion of the films before the water is added, and a strong stream used in washing off the stain, there will be little or no difficulty in the precipitate, which forms while staining, adhering to the film.

The stain improves for a time, and, if properly preserved, it keeps for months in solution, the powder indefinitely.

Other strengths of the primary solutions than those mentioned give good results if the mixture is carefully tested in making; likewise somewhat weaker solutions of the powder in the methyl alcohol are fairly satisfactory, but weak solutions require a relatively longer time to stain after the water is added to the stain on the film.

I have found Gruebler's brands of stain satisfactory, viz.: his "Med. Methyline Blue," "Bx." "Koch" and "Ehrlich." and "Yellowish Aqueous Eosin B. A." I have secured good results also with Merck's "Med. Methylene Blue" and "Yellowish Aqueous Eosin."

It is important to know that the methyl alcohol* is pure, or at least neutral in reaction, since some of the C. P. methyl alcohol contains a trace of acid which may be sufficient to interfere with the blue. The alcohol should be C. P., and if found to be faintly acid, as can be determined with litmus paper, it should be neutralized with sodium bicarbonate solution before dissolving the stain, otherwise the eosin will be too intense, and the blue very pale. If the alcohol used has not been cor-

* Kahlbaum, of Berlin, supplies a methyl alcohol which is said to be free from acid, and I have found it satisfactory without any correction. I have obtained it from Eimer & Amend, New York, and Heil Chemical Company, St. Louis.

rected when necessary, a little of the sodium bicarbonate solution may be added to the finished stain, which will intensify the blue.

It is also essential that pure distilled water be used for making the stain, likewise for diluting the stain on the film and in washing the stain off the film.

The methylene blue eosin stain gives the following reaction :

Red cells, cytoplasm light pink or yellowish, nuclei dark blue.

Lymphocytes, cytoplasm pale blue, nuclei dark purplish blue.

Large mononuclears, cytoplasm light purplish blue, somewhat granular in appearance, nuclei purplish.

Polynuclear neutrophiles, cytoplasm unstained or very light purplish blue, nuclei dark bluish purple, granules purple or reddish purple.

Polynuclear, eosinophiles, cytoplasm unstained or very light purplish blue, nuclei dark bluish purple, granules pink.

Mast cells, cytoplasm unstained or very light purplish blue, nuclei light purplish blue, granules deep reddish purple, or blackish.

Myelocytes, cytoplasm unstained or very light purplish blue, nuclei purplish, granules reddish purple.

Malarial organisms, trypanozomes and similar organisms, cytoplasm blue, nuclei red or dark reddish.

Pigment of malarial organism unchanged, brown or black.

Granules of red cells, incident to contained malarial organisms, pinkish.

Granules of red cells, incident to anæmia, blue.

Bacteria blue or purple.

Blood plates reddish purple or bluish.

In conclusion, the chief advantages of such a combined methylene blue eosin stain are the following :

The rapidity of application ; the power to stain cytoplasm, chromatin and granules ; the good differentiation of leucocytes, the clear staining of pathologic elements, and the durability of both the stain and the stained preparations, which latter keep well for a year or more.

As a result of numerous tests and observations, I believe that the reason for the variation in the staining power of the different samples of the stain made by the various methods is that the primary solutions have been combined in too definite quantities ; not adapting these solutions, which may vary somewhat, to each other ; also, that not sufficient attention has been given to the purity of the methyl alcohol and the distilled water.

I have obtained uniform results in making the stain by some of the other methods when I have titrated the mixture and used *pure* distilled water and *pure* alcohol.

I have used many of the blood stains for different pathologic conditions, but during the past two years I have relied upon the oxidized

methylene blue eosin exclusively, and can fully corroborate Cabot's opinion as expressed in the new edition of his work on the blood, viz.: that it is the best for all purposes for which one uses a blood stain at all.

I would especially emphasize the following points concerning it: Use some of the reliable crude stains for making the primary solutions, test the staining power of the mixture well before filtering and drying, be sure that the C. P. methyl alcohol is neutral, and use pure distilled water.

4287 Olive street.

AMPUTATION NEUROMATA, WITH THE REPORT OF THREE CASES.*

BY THOMAS H. MANLEY, PH. D., M. D., of New York.

Aside from the dangers attending any major amputation and the serious loss involved, every cautious, conscientious surgeon always must experience unpleasant misgivings as to the ultimate behavior of the resulting stump after healing is complete: because, through the operation of various causes beyond one's control, fashion the flaps as we may, a sensitive, painful stump will often result, sometimes demanding a consecutive resection, and frequently forbidding the use of an artificial limb with any degree of comfort or security.

This occurs usually through the operation of two conditions: one from pathological changes in the osseous structures, caries or necrosis in the ends of the divided bones, or interstitial fatty degeneration, a species of localized *mollities-ossium*; secondly, from a lesion of the large nerve trunks, with, at times, hypertrophy or bulbous enlargement of the ends of one or more of them.

It is my impression that the neural sequelæ are by all odds the most distressing and the most frequent, though they only occasionally call for operative relief.

Every surgeon is familiar with the delusive, yet disquieting sensations so many patients experience over varying periods of time, in the heel, in the sole or in the toes of a foot cleft from the body; and, again, the spells of excruciating spasmodic pain they suffer in an apparently healthy stump; sometimes the seizure coming on in the middle of the night, when all the muscles of the limb are thrown into the most violent, convulsive contraction, the patient failing of relief until he seizes the limb and forcibly holds it in position, when the nerve storm passes off.

Again the whole stump, or certain areas of it supplied by a sensory

* This manuscript was received a short time before the death of Dr. Manley, but the publishers were unable to give it space in previous issues.

nerve trunk, remains exquisitely hyperesthetic over a long period before the limb is "broken in" to wear an artificial limb.

The most melancholy feature about this phenomenon is, that it may be witnessed equally as frequent when the osseous ends are well clothed by integument, as when the breach is filled in by scar; and in some instances, it may remain permanently and preclude the possibility of ever wearing an artificial limb.

Bulbous Enlargement of the Nerves.—Although the term bulbous enlargement of the nerves after amputation had been heard of by me since my early days in practice, it was only within comparatively recent years that it was possible to convince me by ocular demonstration that such a condition could exist. It had long, however, been well known to me that no tissue whatever in the body possessed the regenerative activity of nerve, and that it manifests an inveterate tendency to bud and grow in the direction of its long axis after division, and anastomose or unite with another nerve lying in its path.

When a search was made into the literature of the subject, it was evident that bulb-endings of nerves were either unknown or disregarded by surgeons in general, as in many of the larger text-books and treatises on surgery by eminent authors no mention of this condition could be found.

But, if we find little on amputation-neuromata surgical literature is comparatively prolific in accounts of other neuromata, pathological and traumatic; many of them are recorded as calling for amputation of the limb, notably, those involving the deep plantar nerves, or those seated deeply in the deep tissues of the hand.

Lawrence reported a case of amputation of the foot for supposed sarcoma. After amputation a massive neuroma was found. Tyrell points out that in amputation-neuromata "there is no constant relation between the volume of the tumor and the intensity of pain."

Smith records an example of the above class of tumor in the stump of a forearm amputated ten years previously. The patient suffered almost insupportable pain; there were three neuromata; two were indolent, those of the median and ulnar nerves; the painful one was in the bulb of the internal-cutaneous.

Girard's case points to the tendency of recurrence in some instances. His patient, a man of fifty-six years, lost his arm by a crush twelve years before in the middle of the humerus. For two years before Girard saw him, severe pain existed. A neuroma the size of a cherry was discovered growing from the brachial plexus. This was excised. In the course of the two following years regrowth was so rapid that it had to be resected three times. It appeared again for the fourth time, when it was destroyed by the electro-cautery; after this there was no relapse. Before the latest means were adopted, the patient begged to have the limb amputated.

Johnson cites an instance of triple neuromata in a vigorous young woman of twenty-seven years, whose forearm was crushed by a machinery accident, and an amputation had to be performed. Three years afterward so distressing was the pain in the stump that she returned for treatment. Bulbous enlargement of three nerves, the median, ulnar and radial was discovered from free expansion, and all found blended in the scar tissue of the stump.

They were all resected. Nine months after there was recurrence in the ulnar. After the new growth was removed there was permanent relief. Several remarkable and instructive examples of amputation-neuromata may be found in the writings of Swan, Billroth, Blazius, Ellenmeyer, Hildebrandt, Greiswald, Ashurst, Rocher, Forgue and Le Dentu.

Etiology.—I have been unable to find any case of amputation-neuroma recorded as occurring, except when a limb has been amputated for trauma. Nor does it appear that, with but one exception, any surgeon recommends such technique as may obviate those new growths after the flaps have healed.

Some years ago, Dr. N. Senn insisted that if the nerve trunk was well drawn down and made *conical*, by removing a v-shaped piece from the center of the end and then carefully closing in the nude ends, by suturing the sheath, bulbous enlargement would not be so liable to occur.

But in spite of these precautions in one of my own cases, large expansion of the nerve followed.

It is probable that clubbing of the nerve ends occurs more or less after all amputation. In the near future, it is my intention to endeavor to inquire into this phase of the subject, by the dissection of old stumps on the cadaver.

After amputations, especially in young subjects, the divided nerve continues to grow until it is arrested by the tissues in the stump, or is projected against the sheath of a muscle or the inter-muscular fascia.

If it be a motor nerve which is involved, and if the outgrowth is not large, it remains indolent, but if it consist of a sensory nerve-trunk, or even if there are numerous filaments gathered up by the enlarging end, neuralgic pains with spasm are prone to follow. It is probable that, however, in the greater number of cases, the nerve tissue in the bulb itself is insensitive, especially in old cases. In none of my cases did the microscope show any distinct evidence of the normal medulated nerve fibre or the axis cylinder in the central substance.

That sensation is transmitted from neighboring filaments was demonstrated in my last case, operated under cocaine-analgesia, because, after the bulb was lifted out of the incision and entirely freed before division, on severe pressure, while the patient was conscious of the manipulation, he said there was no pain whatever.

Treatment.—Treatment is tentative and radical. When, for various

reasons, we suspect the operation of constitutional causes, they should receive our attention.

Some authors regard syphilis as an etiological factor; others affirm that only neurotic patients suffer. It is probable that in most instances the dominant pathological changes are in the nerve-sheath and the perineural elements; certainly the atrophied and transformed nerve cell of the interstitial substance cannot be regarded as a factor in producing reflex spasm.

Local measures with rest of the stump have often sufficed in my hands, in several cases pointing to bulbous hypertrophy; moreover, in all, if an artificial limb is worn, it must be set aside till hyperæsthesia has passed completely off.

If, however, simple local and constitutional measures fail after persevering trial, then we must resort to operation; but bearing in mind the possibility of an early regrowth, we will do well to be reserved in prognosis.

NOTES ON CASES.

Case 1.—Patient male, thirty years old, left limb crushed below the knee by a runaway accident, July 4, 1891. Amputation midway between knee and ankle joint two weeks later; stump covered by a Teale flap; primary union. After six months, he wore an artificial limb.

Came to me after five years, because of agonizing pain in the stump; most distressing seizures coming on at night, after long standing in the management of a restaurant.

Under aspect of the stump, where flap was the thickest, was the most sensitive point. Temporizing expedients gave no effective relief. Sent him to Metropolitan Hospital; when under ether, the point of highest sensibility was freely divided, and a bottle-shaped clubbing of the end of posterior-tibial nerve was exposed and removed. The relief was immediate, and has remained.

In this case it was remarkable before operation how widespread the reflex spasm was, when the sensitive spot was pressed on, throwing all the muscles of the leg and thigh into convulsion, twitching with alternate, powerful contractions. Again, there were intervals when spasm was absent, but the whole stump was extremely painful, especially when an attempt was made to wear a support.

Case 2.—Patient, a powerfully built negro, forty-two years old, while stealing a ride on a freight train moving out of New York, fell and had the left lower limb crushed by car wheels just above the knee joint.

This was in January, 1890. An amputation was made, employing a circular flap. Union was tardy, owing to a partial sloughing of the flap.

Ten years later he came to me, complaining of great suffering from pain in the stump, it being more or less severe for three years; but now it rendered sleep impossible, and he begged relief by any possible means

Examination failed to reveal any evidence of osseous lesion, but the tissues over the stump were everywhere extremely hyperæsthetic. Many a night, he said, he had to sit up in bed and "hold the limb down," so violent was the spasm, when, he declared, "the pain went up to the very hairs in his head."

He gave a history of having consulted several physicians and tried various remedies, but without help.

In this case, on dissection, it was found that there was a massive mushroom expansion of the sciatic nerve, widely spread out and firmly incorporated into the tissues of the stump.

Operation was performed under a pulmonary anæsthesia. A dissection was made up about four inches, between the muscles of the ham strings, when bulbous nerve was resected. Union was rapid. Two years later I saw him, when he enjoyed complete relief.

This, with the preceding case, illustrated the comparative simplicity of operation for relief and cure in this condition. It is unnecessary to keep the patient in bed any time at all after anæsthesia passes off. This patient left the hospital the same night after operation, returning on crutches for one or two later dressings.

Case 3.—Patient, twenty-two years old, brakeman, had his left arm crushed by being run over by a railroad car in Long Island City in June, 1896. An amputation was made about two inches above the elbow. One year later he was sent to me by Dr. J. M. F. Egan, of this city, with an osseous protrusion throughout the end of the stump, accompanied with ulceration in the adjacent soft parts. The projecting necrotic bone was removed, together with about two inches of the investing soft tissues. This involved an exposure and division of the three large nerve trunks at this point. Bearing in mind Dr. Senn's admonition as to the manner of dealing with the divided nerves, his technique was adopted in all its details. Repair was rapid. One month ago he came to me again, this time to the Metropolitan Hospital, for relief from a distressing affection, not *in the stump*, but *above it*, on the inner side of the arm, three inches above the stump. Here a distinct, movable, but exquisitely sensitive, tumor could be made out. When the arm was raised and the biceps relaxed it came easily under touch. On slight pressure all the muscles went into spasm, with distressing pain.

In this case, at the patient's request, cocaine, hypodermically employed, was substituted for pulmonary anæsthesia, and it served the purpose admirably. On dissection it was found that the tumor consisted of the enlarged ends of two nerves, viz.: The median and the internal cutaneous, both enclosed by the same sheath. Section was made high above the point of inosculation of each nerve. Union was prompt, with entire relief.

This case was instructive, because of the composite character of the complication of the sequela after amputation, viz., the *osseous* first, and

the *neural* consecutively. Moreover, it proved that local cocanization may be utilized with perfect satisfaction in this type of neurectomies. And here, too, we had an example of two nerves in *one* bulb. These few cases are certainly inadequate to generalize on, but as far as they go they teach us that in highly sensitive stumps after amputation, when simple expedients have failed, persistent neuritis in the clubbed nerves, with accompanying agonizing pain, should be always promptly relieved by a very simple and safe operation, which may be performed under local analgesia, and one which need not invalid a patient in bed a single day. My third case pointed to the inefficacy of the Senn method of treating the nerve ends with a view of prophylaxis.

115 West Forty-ninth street.

NOTE.—Since the foregoing was prepared for publication the large atlas and text on the "Pathology, Diagnosis and Treatment of Neuroma," by Robert W. Smith, F. R. C. S. I., came under my notice, and though published before the writer was born (1851), in none of the later contributions have I found the subject here so fully and ably dealt with as by this Irish surgeon in Dublin; and believing that a few abstracts on "Amputation Neuroma" would be most acceptable to surgeons, these few quotations are added. He said of the amputation-neuromata, the post-operative nerve-bulb, "Their existence in such cases is so constant that we may perhaps consider them as representing the normal condition of the nerves in the stump."

Although in some instances they are productive of paroxysms of neuralgia, yet in the majority of cases they are not the source of any uneasiness whatever. Richet claimed that their size bears a direct ratio to the quality of the surrounding cellular tissue and the length of time which may have elapsed since the division of the nerve. The largest tumors are connected with the largest nerve-trunks, and this is what we would expect if we are to consider them as being formed for the protection of the divided extremity of the nerves. . . .

The nerve tumor is usually formed at a variable distance from the end of the stump, by which it is less exposed to irritation . . . I cannot agree with those who declare them to be due to pressure on the end of the stump, because they are constantly found to exist, when from the period of amputation up to the decease of the individual, the stump has never been subjected to any pressure. . . . I believe that the final object of these formations is for the protection of the divided nerve end. To the question then of Cruveilhier, "*Ces rentlemens sont ils un moyen de protection pour les extremities des nerves?*" I would reply in the affirmative, though this distinguished pathologist appears inclined to ascribe them to the effects of pressure."

LITERATURE.

- Girard: Zeitch f. Chir. Leipsic, 1872, vol. i, pp. 137-140.
Lancet, 1858, vol. i, p. 627.

- Carden: *Essai Sur. les Neurom.* 40 Paris, 1876.
 Ellenmeyer: *Amp. Neurom.* 1858.
 Johnson: *N. Y. J. M.* 1858, 38 v., p. 401.
 Hilderbrandt: *Amput. Stumpf. Deutch. Woch.*, 1899, vol. xivi, p. 31.
 Swan: *Diseases and Inj. of Nerves*, *Path. Trans.*, vol. xxviii.
 Billroth: *Surg. Path.*, p. 312.
 Blazins: *Arch. f. Chir.* Band ii, p. 27.
 R. Smith: *Path. Trans*, Dublin, 1849.
 Holmes: *Treatise of Surg.*, vol. vi, p. 27.
 Kocher: *Encycl. Des. Gessamt Chir.*, p. 203.
 Ashurst: *Inter. Encyclop. of Surg.*, vol. iii, p. 390.
 Ziegler: *Text-Book of Special Path.*, p. 479.
 Le Denta et Delbet, *Trait De Chir.*, vol. iv, p. 417.

INDIFFERENCE TO DIAGNOSIS ONE OF THE DANGERS OF MODERN SURGERY.

BY JACOB BLOCK, M. D., of Kansas City, Missouri.

Aided by the modern auxiliaries, anæsthesia, hemostasis and asepsis, the surgery of the past few decades has probably kept pace with the advancement of the arts and sciences in general. A critical review only, however, can determine the truth of this statement. That the average layman has enthusiastically accepted it counts for little. An association of critics, including those drawn from other scientific fields, as well as that of surgery, would be the only competent court to decide. Acknowledging such a composite tribunal as indispensable to the solution of the question at issue, it is not my purpose to more than assume its probability.

Emboldened by the security afforded the operating surgeon through the means just indicated, he has invaded every possible terrain in the human economy. What were regarded as the chimerical previsions of the hopeful and enthusiastic are now accomplished facts; the vagaries of a disordered brain the acknowledged clairvoyance of a giant intellect.

Eager to reduce theories to fact, every means has been employed in the development of perfection in operative technique. Whatever collateral art or science could offer or suggest was appropriated as the inherent right of the operating surgeon. The art of surgery, partaking of the spirit of its environment, yielded to the material demands of the age, where apparent success is the only criterion of merit. Nor has this utilitarian spirit been without its achievements, though chargeable with a percentage of faults.

Experiments looking to the relief and cure of the previously hopeless have brought comfort and health to countless thousands. Reduced mortality, the elimination of suffering and economic conservation are

the proud triumphs of the benevolent as well as the ambitious or, perhaps, even the commercial surgeon of the present era.

A spirit of restlessness, brooking no delay, has supplanted the tireless efforts of the subtle diagnostician. Where obscurity involves a plea for time a sanguinary prestidigitateur exposes the *raison d'être* to the astonished gaze of the clinician. Where the diagnosis is all but certain he will not renounce his right. The knife only can reveal the cause. The pathologist even is forestalled by this intruding usurper. Exploratory and confirmatory sections, either synonymous or simultaneous, claim their rights.

To further develop surgery as an art, instruments of precision have rapidly multiplied to aid the senses where trenchant methods were neither available nor politic. That they have accomplished much is attested by the splendid achievements of those skilled in their use. They have diagnostically substituted the clever but uncertain guesses of the clinician and operatively minimized the risk, pain and expensive delays incident to more heroic methods.

Reducing diagnosis to an artistic objectivity seems to be the aim of some extremists. Not only are they indifferent to valuable subjective data, but they even regard them as misleading and dangerous.

With the development of surgery as an art, skillfully employing the mechanical means prompted by the scientific and material requirements of the age, what has become of the anatomic, physiologic or clinical surgeon? Has he developed *pari passu* with his artistic competitor?

With a Wagnerian display of sound, color, light and other accessories in the amphitheater, where is the soul of the affair? Who but the distant composer knows its motif? The artist even, not to speak of the inquiring spectator, is often innocent of this leit motif, and remains uninitiated.

But there is a charm about that which we do not sufficiently apprehend, and especially when guaranteed by a sponsor of reputation. Here is the opportunity for the charlatan, and that the commercial pretender is making use of it is a daily experience.

To the ambitious but honest, it is a safe conduct to satisfy an enthusiastic craving to allay suffering and acquire renown.

With the enormous increase in the number of operations performed during the past two or three decades, it would be difficult to collate comparative statistics, based on either mortality or benefits, temporary or permanent.

It must be remembered that in proportion, both to the population and the diseases for which these procedures are undertaken, owing to the lack of comparative antecedent data, the ratio is hardly computable. Again, the operating surgeon loses sight of the vast majority of his surviving clientele, proclaiming his skill as an artist, the family attendant often being in possession of the suffering mortal remains that have been

accounted as surgical triumphs. Who knows the number of surgical neurasthenics, surviving legitimate or craftily devised operations? Who knows the number of deaths hastened by the exploratory or confirmatory incisors? Who knows the number so wrecked by the pretending sanguinary diagnostician, refusing a second but legitimate procedure to relieve them, after the error has been disclosed.

A very few of the many it has been my lot to witness will bear narration with benefit, I am sure, to the most competent surgeon, if only to remind him that surgery is a science as well as an art.

Within the past few months, an individual in the prime of life, began to complain in that region doing credit to the acumen of McBurney. Appearing at irregular intervals and declaring itself with greater or less severity, it did not always abide in that vicinity, but wandered toward the median line, and even downward along the genitals, sometimes appearing in the loin, and on one occasion being sufficiently intense to confine him to his bed. I had an opportunity of seeing him a number of times. He had some elevation of temperature and acceleration of pulse with diaphoresis warranting the presence of an inflammatory process. The loin and right lower abdominal quadrant were somewhat sore and tender to touch; meteorismus slight, and the other constitutional signs unimportant. Some two or three urinary examinations, among other things, always disclosed a few blood cells or shadows. Provisional diagnosis, either renal calculus or a local unilateral, interstitial inflammation. The possibility of tuberculosis was not excluded.

During an absence from the city, one or more of these attacks crippling the patient, a hasty diagnosis of appendicitis and an operation with negative findings was the result. To satisfy the inquiries of the patient and friends an indefinite accusation of the kidney was made.

Later examination by myself revealed continued presence of blood in the urine, often amounting to a macroscopic haematuria. Leucocytes were abundant. Cystoscopy disclosed a cystitis, probably due to catheter infection. One operation sufficed to cure the patient's belief in surgery and he must now relinquish the possible benefits to be derived from a second. There are other minutiae, but I must waive the temptation of their recital for want of time.

The second instance of misapplied surgical art was in that of a tall as well as somewhat portly gentleman, weighing some two hundred and seventy pounds, in the prime and vigor of life. He had complained of an indefinite pain and distress in the right loin and hypochondrium. A very capable as well as distinguished operator felt convinced that a biliary calculus accounted for the disability. Operation failing to locate the offender, cholecystitis was made the scapegoat; the gall bladder was anchored and drained for a few weeks with negative results.

A carefully conducted inquiry and examination, made some few weeks later, removed the locus to the kidney as presumably at fault. Blood

cells and shadows, and later a genuine macroscopic hamaturia, were the substantial witnesses.

Suggesting operation, the patient declined, the shock of the first having been sufficient to temporarily cure him of what he feared might become a habit.

A young neurasthenic, with all the stigmata to condemn him to the tender care of those especially interested, consulted me for an alleged uro-genital disorder. Some slight smarting, but no frequency was complained of. Careful inquiry failed to elicit the presence of a discharge, though it was assumed. Venereal history denied. Nothing abnormal in the urethra, epididymes, testes, cords or vesicles. The urine contained an excess of mucous and urethral epithelial elements and many oxalates. The first bacteriologic examination made without the precautionary balanic and preputial ablution, revealed the presence of a pseudo tubercle bacillus-smegma bacillus. This failed to appear, however, upon a subsequent perfected technique. The cystoscope failed to disclose anything abnormal, save an osteal ecchymosis about the right ureter, due to a previous catheterization. Yet, this case was condemned as tubercular. I might add that my negative finding was confirmed by several eminent specialists in this field.

A desire to impress patients with the importance of these preciser methods, coupled with a fondness for a vain display of the newer armamentarium, and an insufficient knowledge of its limitations, are the possible reasons for this error. It is needless to say that it meant the loss of no little reputation to the specialist.

A woman of forty-three, whose history was unimportant, save that she had been a parturient three or four times during twenty odd years of her married life. The first delivery was normal, resulting in the birth of a daughter, her only living offspring. The second was coupled with some difficulties, upon which I am not quite clear. The third, some nine or ten years ago, was a placenta previa, requiring hurried version. This was followed by eclampsia, loss of the child, laceration and retroversion with slight prolapse.

For this she was curetted. Later a trachelorrhaphy and an Alexander was done by an operator of national reputation. It might be added that, owing to the fetid discharge and menorrhagia, with the possibility of a final malignancy, the writer, wrongfully, as the sequel proved, suggested a hysterectomy, which was declined.

Some months ago I was called to see her in consultation with a young surgeon of reputation, if not eminence, in a large Eastern city. She was then in hospital, awaiting my consent to a hysterectomy for a supposed myoma, if not malignancy. There was a history of irregular menstruation of some months' duration, and gastric reflex disturbances. Despite the irregular menses, there could be traced two distinct months of menstrual cessation. There was constant nausea, with vomiting after

the ingestion of food and a pronounced ptyalism. A physical examination revealed an enlarged but soft uterus, slightly retrodeviated. The cervix, however, did not present the customary softness of pregnancy. This was probably due to the cicatricial hardening and narrowing of the canal, following the trachelorrhaphy. So strongly was I impressed with a belief in her pregnancy, that I urged her immediate removal from the hospital. Since everything had been prepared for an operation, this was reluctantly consented to, much to the disgust of the nurses and the disappointment of the surgeon.

I suggested the counsel of a distinguished internist, asking that an analysis of the gastric contents be made. This gentleman reported a hyper-acidity, and gave it as his opinion that the stomach was reflexly disturbed, though he did not believe her to be pregnant.

Ten days after this I received another summons, the patient urgently demanding relief. She scorned the idea of gestation, which view was approvingly shared by the surgeon. I emphasized my conviction to the contrary, submitting under protest and thrust the responsibility upon patient and operator. They would not heed my counsel to await developments.

I had the pleasure of assisting in one of the most beautifully performed hysterectomies I have ever witnessed. The technique left nothing to be desired, so artistically was it done. Imagine my chagrin and the mortification of the operator when we discovered a three-months' foetus in a healthy uterus!

Though the patient made an uneventful recovery we were guilty of an avoidable foeticide, and the mother deprived of a son, the possible hope and glory of her declining years.

These are only specimen copies of the recent past that could be duplicated almost ad infinitum. Nor does the writer claim that he has been entirely blameless. He, too, has fallen into the error that the knife is sometimes the only arbiter in the decision, but he does insist, never recklessly, pretentiously, nor with the hope of a reward beyond his legitimate due.

The reasons for these almost inexcusable blunders are not far to seek. The physician and surgeon is no better nor worse than other workers in the hive. His efforts and character are the reflexes of his era and environment.

In the fierce struggle for existence, reputation, renown and recompense so engross attention, that character becomes of either secondary importance or is altogether lost sight of. To achieve, to get there, is the motto, and the means are not always scrutinized with that care which integrity prompts.

Self-preservation is the first law of nature. A crowded profession and the necessity of a livelihood are the meager apologies for irregularities that are regarded as of slight importance.

The public admires the intuitive diagnostician. He is preferred to the conscientious plodder whose care and conservatism is often mistaken for ignorance. He who hesitates is lost. The patient is hurried off to the operating room lest a more active competitor get the victim.

Since time permits only a synoptical review of the purpose of this paper, I can merely suggest that much of this unnecessary surgery is avoidable. Instead, we should avail ourselves of those analytical means at our disposal by painstaking care and search. It is not expected that every operating surgeon should be a Leonardo da Vinci or a Michael Angelo—a universal genius. Such men are rare, and one in a generation or two would about fill the measure of our expectancy. This, too, corresponds with an historical rule. Few men can be great operators and great surgeons as well, and when finally modest enough to acknowledge this, they will call to their aid those skilled where they are deficient, those willing to make a reconnoissance where they are booted and spurred, restless for action.

The internist who is gradually being crowded from his legitimate sphere of activity by the claque and reclame of the machinery doctor, should be the collaborateur of the really skilled and conscientious operating surgeon, thus avoiding the snares and pitfalls into which the zealous too readily precipitate themselves.

Surgical trauma, even at the hands of the most skilled and where legitimately invoked, often results in shock, with subsequent neurasthenia, hysteria and a host of neuroses, as formidable as those induced by accident. The neurotic aftermath, often worse than the malady for which the surgeon intervened, may be months and years in disappearing. A sympathizing jury often indemnifies real or malingering neurasthenics when corporations are defendants. What if they should take a turn at the surgeons? I once heard a colleague, in discussion, justifying exploratory laparotomy by comparing it with a paring of the finger nails. What influence must such utterances exercise upon those just entering a chosen profession?

To my mind all operations undertaken hastily or recklessly, and without thoroughly canvassing the reasons for or against, or without an approximately certain diagnosis, are inexcusable makeshifts, stigmatizing the profession. This is especially true if the conditions are chronic. To make them substitute performances with a hope of gain, is damnable and little short of crime.

That explorations are often the only possible means of determining a condition not otherwise ascertainable we all admit; but the number could be enormously reduced if we employ our heads as well as our hands. If we would but put brains into our fingers, eyes and other senses, and were not itching for something brilliant to edify a credulous public.

Assuming that in the two instances first cited the operations undertaken were, in a sense, exploratory—and this is one of the devices screening diagnostic ignorance—were they not only negative but positively harmful?

These explorations should and could often be ante-operative affairs. The means are at hand. Post mortem pathology has logically accounted for many clinical contradictions.

Is it not about time that we acknowledge our pretended indebtedness to the ante-mortem surgical findings that have contributed to the sum of our knowledge?

In this way only can we escape the charge of being human vivisectionists instead of surgeons.

CLINICAL REPORTS.

A CASE OF PARATYPHOID INFECTION.

By ALBERT E. TAUSSIG, M. D., of St. Louis.

The following case, while unfortunately not completely worked out, is suggestive from some points of view, and therefore, perhaps, worth reporting.

D. S., a Hindoo, twenty-five years old, came for treatment to the medical clinic of the Washington University Hospital on July 26, 1904. His family history was good in every way. He had never before had any illness of consequence, did not use alcohol, tobacco or drugs, and gave no history of venereal disease.

His present illness began two weeks ago with a feeling of general languor and malaise. This the patient attributed to constipation, and took a purgative. His bowels moved freely, but there was no improvement in his subjective discomfort. He had been sleeping poorly, suffered from nearly constant headache, and found himself growing constantly weaker. He believed that he had been having fever ever since the beginning of his illness. His appetite had remained fair, and he had had no particular abdominal discomfort. The bowels had been rather costive.

The patient was a small, sallow individual, showing considerable emaciation, face flushed, eyes dull, skin dry and hot, tongue coated, its margin indented by the teeth, the latter covered with sordes. His temperature was 101.4, his pulse 80 when quiet, but becoming very rapid when the patient exerted himself a little. On physical examination nothing abnormal was found in the thorax. The abdomen was not distended or tender, no rose spots; the hard, smooth edge of the spleen could be felt on deep inspiration about 2 cm. below the costal margin. The urine was high colored, sp. gr. 1027, no albumen, diazo reaction negative. A Widal reaction done with the blood serum was negative. After two hours in the incubator at 37° C., there was firm clumping with loss of motion in a dilution of 1 to 20; most bacilli clumped but many still in motion in a dilution of 1 to 50, and only slight clumping at 1 to 100. There were at the time no cultures of paratyphoid at our disposal.

The patient was sent to St. Luke's Hospital and put to bed there. That same afternoon 8 c. c. of blood were sterilely aspirated from his cephalic vein and divided among three flasks containing 200 c. c. of bouillon each. In all these flasks a pure culture of a bacillus developed, the characters of which will be described below. As for the patient,

his temperature rose that evening to 103.6°, pulse 98, respiration 28. He was given an enema, a cool tub bath, was put on liquid diet, but given no medication. During the night his temperature gradually declined to normal, and remained there. His spleen was palpable for several days, but slowly receded to its normal size. No new pathologic signs or symptoms developed. He was discharged, well, on August 4.

The bacillus isolated from the blood was short with rounded ends, very slightly motile. It grew profusely on all ordinary media, the colonies on agar plates being round, bluish-white and elevated in the center. It coagulated milk in twenty-four hours with the formation of acid, caused the formation of gas in glucose agar, reduced neutral red agar, but did not produce indol in Dunham's peptone solution. Unfortunately press of work at the time prevented further study of the bacillus, and when it was taken up again all the cultures had died out. The same is true of agglutination tests made with the bacillus. Owing to a technical error, the results of agglutination experiments made on the bacillus with the patient's and other blood were negative. Before another blood sample could be obtained the patient had left the hospital.

Nevertheless, the morphological and cultural characteristics of the bacillus, as well as its source, all point towards its being a paratyphoid. Clinically the case was of the sort that all of us see with considerable frequency—cases that at first sight impress us as typhoids, but in whom the laboratory diagnosis contradicts the chemical one, and in which the rapid recovery, too, makes the diagnosis of typhoid fever untenable. It may be that more of these obscure febrile cases are paratyphoid than we might suspect.

TWO CASES OF INTESTINAL TOXEMIA.

BY ALFRED FRIEDLANDER, M. D. Cincinnati, Ohio.

At the present time the subject of intestinal toxemia is attracting a good deal of attention, largely from the view point of etiology. Our knowledge of the poisons which produce this condition is very incomplete as yet. There is still much difference of opinion as to whether the acid intoxication so commonly found in this condition is to be regarded as cause or effect. It is universally recognized, however, that this toxemia is exceedingly common in infancy and early childhood. From the clinical side the symptoms on the part of the nervous system are often very marked, and attention is frequently called to the fact that these nervous phenomena may vary in intensity from vertigo and headache to delirium, stupor or coma. As Rachford puts it, "The nervous symptoms which result from acute intestinal toxemia may vary in severity from slight fever, with exaggerated reflexes, to a high fever and convulsive disorder

so severe as to produce death." As illustrating this point, notes of two cases are appended.

Case 1.—F. S., male, *et.* seven years, well developed and fairly well nourished. Family history negative. Both parents well, no neurotic tendencies. For about six months the child had had slight attacks of diarrhea, alternating with periods of constipation. Occasionally the child would be nauseated; would vomit once, and then be perfectly well again. Regulation of diet brought about decided improvement for about three months. In October, 1904, the child complained one evening of dizziness, vomited once and had a loose, offensive stool. Temperature 100 F., physical examination negative. Calomel, gr. 1, was given at once. The night was restless. Toward morning there were three evacuations of the bowels. In the morning temperature was 99, child drowsy. All food except strained barley broth was interdicted, but the child refused even this, and took nothing but water. The evening temperature was 99. The mother reported that the child "had slept most of the day." The child slept soundly all that night. Next morning the temperature was 97.6. The boy lay in a condition of stupor from which he could with difficulty be roused. With the exception of a heavily coated tongue, offensive breath and slightly exaggerated reflexes, physical examination was negative. On this day the bowels were again moved thoroughly with broken doses of calomel. The urine which was scanty, contained neither albumen, sugar nor casts. Unfortunately, careful examination of the etherial sulphates was not made. The child took such food as was offered, principally cereal decoctions, but never manifested any desire for it. This condition of affairs lasted, without much variation, for five days thereafter. The temperature was at all times slightly subnormal. Minute doses of calomel secured daily bowel movements, usually offensive. On the sixth day the child could be aroused more easily, though when aroused he cried piteously and begged to be allowed to go to sleep. On the seventh day the mental condition became much clearer and the tongue had cleaned. Thereafter convalescence was rapid, the child regained his appetite and became perfectly normal again. He has been in excellent condition since the attack, though still on a carefully regulated diet.

Case 2.—C. F., female, *et.* fourteen months. Well developed and nourished infant, breast fed up to the end of the first year. Weaning had been accomplished without difficulty, the child taking cow's milk and cereals, and there had been a steady gain in weight. In October, 1904, I was called to see the child one morning. The mother stated that it had been vomiting incessantly for twelve hours; that it had had no movement of the bowels for thirty-six hours. Temperature was 101, abdomen retracted, examination otherwise negative. All food was stopped, and 1-20 grain doses of calomel given every hour. At the time of the evening visit it was reported that the vomiting had ceased. There

had been no movement of the bowels, however. Temperature at this time was 104, pulse 110. Abdomen retracted. There was distinct rigidity of the neck muscles. Pupils contracted, but reacting sluggishly to light: nystagmus distinct. The child lay in a stupor. At times muscular twitchings of the extremities could be noted. The picture was that of a typical beginning meningitis. A high colonic flushing with warm saline solution was given, followed by a copious, very offensive stool. An ice cap was applied to the head and nape of the neck. Twelve hours later the picture had changed completely. The temperature had fallen to 102, the child was distinctly brighter, but a complete left hemiplegia, arm and leg, had developed. The neck rigidity had disappeared: so, too, the nystagmus. Reflexes exaggerated on the affected side. In twenty-four hours the temperature was normal. Bowel movements were easily secured by calomel and enemata. The child now took food eagerly. In a week the paralysis of the lower extremity had disappeared completely: in two weeks that of the arm likewise. During this period the reflexes remained exaggerated. The electrical reactions in the affected extremities were normal throughout.

The child has been perfectly well since the attack.

22 West Seventh street.

CORRESPONDENCE.

EDITOR INTERSTATE MEDICAL JOURNAL, ST. LOUIS, MO.:

I have just read in the February number, with much interest, an article by Dr. Nathaniel Allison on osteotomy to correct "silver fork deformity" following fractures of the forearm.

I am glad to note the improvements of modern surgery, but am sorry to learn, incidentally, from the doctor's article and the discussion which followed, that a simple and definite method of treatment is not generally agreed upon. As long as there are so many ways of treating this fracture there will probably be a necessity for osteotomies to correct the resulting deformities. I think "an ounce of prevention is worth a pound of cure."

Hamilton indicates clearly the principles to be guided by, and the anatomy of the hand has not changed any since he wrote. I wish to give, for the benefit of the general practitioner, the young doctor and the country doctor, a simple, easy and effective way of applying these principles—a method I have used for many years to my satisfaction and comfort.

The articles necessary, and which I always keep on hand, are some flat slats about one-fourth of an inch thick, or smooth shingles without flaws or knots, and some pieces of cigar boxes, to make anterior and posterior splints for adults or children, some fine cotton batting and some adhesive plaster. These are the essentials. (I abstain from discussing diagnosis and reduction, and confine myself to retention.)

The patient, if unable to sit up, lies in bed with a board across the chest, with the injured arm lying on it with the thumb towards his head. If able to sit up, the patient does so on a seat so low that the axilla is even with the edge of a table on which the arm lies; the humerus horizontal, the elbow flexed, and the thumb pointing towards the patient. The other arm is now bared and laid on the slat or shingle from which the anterior splint is to be made, and an outline of it traced on the slat exactly the size and shape, from near the elbow to the ends of the fingers.

The posterior splint is to be about three-fourths of the length of the anterior, and should extend from the meta carpo phalangeal joints back. The width of the posterior splint must be marked off by the anterior one. The splints being turned over now are adapted to apply to the injured arm.

The surgeon who has handled the parts knows what the tendency to displacement will be. He sees or feels the deformity to be overcome, and whether or not the parts appear contented to stay in place, putting in some pads accordingly. If the arm is moderately fleshy and there appears no tendency to displacement, a uniform padding of a layer of cotton is sufficient. If there is a tendency to displacement, or the person is very thin, proper padding is necessary. I have often found it convenient, after making up the bed for the arm on the anterior splint,

to take a spool of thread and pass a few yards around it all, to keep the cotton and pads in place nicely while handling them.

Now lay the anterior splint down on the table by the side of the broken arm, raise the arm carefully and let some one slide the splint under, and let the arm down on it. Now lay the posterior splint on the arm and press down gently, and see that all is right. Use adhesive plaster in strips about an inch wide for adults, and about long enough to encircle the arm and lap two or three inches.

Raise the splint on which the arm rests sufficiently to slip a strip of plaster under at right angles to the splint, letting the middle of the strip stick to the anterior splint, and bring up the ends over the posterior splint, letting them lap well, the overlaps being on one side. Put on four or five of these strips, letting one come up between the thumb and forefinger. By this arrangement the strips get a firm hold on both splints, and fix them in parallel planes—a most important matter.

Since the splints are cut exactly the width of the arm, when they are pressed towards each other the soft parts bulge a little on each side and adhere to the strips. This holds all firm, keeps the splints parallel, and there is no possibility of displacement. Otherwise the splints have a tendency to form a V-shaped gutter, and we have no fixed point of resistance for pads. The pressure can be regulated by lifting and resticking the ends of the strips.

For my part, I would not dare to put up a fracture of this kind in any manner that would prevent my regulating the pressure during the first few days until swelling and subsidence had taken place, or in any way that would prevent my inspection at pleasure without displacing the bones.

By laying the arm on a table with the humerus horizontal, the overlapping ends of the strips can be lifted on one side and the posterior splint turned over to one side, exposing the arm, which lies passive on the anterior splint, to be inspected, gently rubbed or brushed or sponged off with alcohol, etc. Any tendency towards displacement can be detected and generally corrected by judicious padding. During the plastic stage this can often be accomplished beautifully.

I forgot to mention that at the end of about a week, when inflammation has subsided, I cut off the anterior splint even with the metacarpophalangeal articulation and let the fingers flex, but have passive extension practiced. Some plaster does not stick well and some slips in warm weather, so it is best to stick a pin in the lap.

Rolla, Missouri.

R. L. JOHNSON, M. D.

[In the discussion of the paper on the "Silver Fork Deformity" the various methods of treatment of fresh Colles fracture were taken up. The writer of the paper stated that he was inclined to favor the long posterior splint recommended by Scudder. The anterior and posterior splints, as recommended by Dr. Johnson in the above communication, had strong support from some of the members, while others favored the pistol position. It was generally agreed that frequent observation and great care are necessary to success in these cases. The above letter gives in detail one of the methods of treatment which, when painstakingly carried out, will give good results. Apathy or carelessness in the treatment of Colles fracture is sure to produce a silver fork deformity.—ED.]

EDITORIAL COMMENT.

THE MEDICAL BOOK REVIEW.

Medical journals receive medical books from publishers for the avowed purpose of passing upon their merits in a critical fashion, or of pointing out their faults and weaknesses. Almost all medical journals have a department in which the opinions of its reviewers are set down for the guidance of its readers. How far this purpose is fulfilled may be an interesting inquiry. A glance through the columns of many weekly, and not a few monthly and special journals, reveals chiefly two things: first, that book reviews in medicine have nothing to do with any kind of critical examination; and, second, that all medical books are of necessity good books. In only two journals of a long list examined, was there any attempt to discriminate between the good and bad. It is obvious that the obligation which a journal assumes in receiving a book from the publishers is paid for in the coin of favorable comment. In other words, the book review is meant always to be a favorable notice, and whatever critical attitude the reviewer might have, must of necessity give way to the publishers' implied demand that the journal receiving the book must likewise advertise the book.

The tendency is so largely in evidence that it may be said with perfect justice that American Medical Journalism contains no channel through which the immense amount of new literature may be adequately commented upon. In a recent number of one of the most widely read weekly journals the book reviews were not only always fulsome, but with a stereotyped quality of fulsomeness that recalled nothing so much as the words of praise found on patent medicine circulars. As a matter of fact, it would be difficult to find anywhere so worthless a lot of books as were the object of so much appreciation.

It will be readily admitted that this sort of thing is more destructive than at first might seem apparent. To remove the only effective means of stemming the tide of useless and harmful literature is a responsibility which the editors of a medical journal cannot take altogether lightly. To praise an obviously bad piece of work harms the author as well as his readers. Multiply this tendency until it becomes a universal habit, and there will result just this: the book review department becomes a part of the advertising space, and it ought to be placed there. It is not less pernicious to praise a bad book than it is to praise an indifferent pharmaceutical preparation in the body of a journal. The one is not done by reputable physicians, the other is. Therein lies the difference.

The more widely a journal is read, the more carefully ought its book notices to be written. It is the general journal, after all, that must take

this task more seriously, and it is this kind of journal which at present most signally fails in its duty.

It should never be forgotten that there is a medical literature full of noble traditions, and as old almost as are the written records of mankind. May it not be that the decline in literary form so noticeable in recent years, is due to the lack of the necessary critical examination to which new books are submitted.

The poorly-written medical book, the one written obviously to sell, the one that plagiarizes another's work, the one containing verbose vaporings under the guise of special knowledge, the short-cut compend, the one filled with categories of unproved statements, and the one (so dear to the average book reviewer) which supplies pap to the much-nursed medical student, and the rest of that unseemly lot known so well to the long-suffering reader, should be treated as they deserve.

Then to a higher purpose must be cultivated the more temperate critical attitude which all books written in good faith deserve to find in their readers. Here the literary critic of medical literature will find his place, and will serve in a measure to fill the place which criticism fills in other literatures. To increase the body of good medical literature should be the sole aim of the medical writer. To aid in this purpose should be the office of the book reviewer. The first step to the latter purpose is a total change in the attitude assumed by medical journals towards new books.

THE CYSTIC DEGENERATION OF THE OVARIES IN CASES OF HYDATIFORM MOLE AND CHORION-EPITHELIOMA.

At post-mortem examinations of patients dying from chorion-epithelioma the ovaries have surprisingly often been found to contain smaller or larger cysts. Further investigations have revealed the fact—which, by the way, was occasionally mentioned by older writers on the subject—that such a cystic degeneration of the ovaries seems almost typical of hydatiform mole. This was, however, not so very surprising in view of the fact that chorion-epithelioma develops so often subsequent to a hydatid mole. More interest has been aroused by the observation of Stoeckel, who found that the epitheloid cells, which line these cysts, appear to be identical with lutein cells. A number of carefully prepared papers, mostly by German writers, followed the publication of Stoeckel. They all accepted his view, and soon it became generally recognized that the cysts so commonly found in the ovaries of cases of hydatiform mole and chorion-epithelioma respectively belong to the rather uncommon form of corpus luteum cysts.

This discovery was made at about the time when Fraenkel's ingenious theory concerning the function of the corpus luteum had proved a most fruitful field for scientific research. The possible importance of this

pathological alteration of the corpus luteum in the etiology of hydatid mole forms the subject matter of a large number of papers which have appeared within the last two years. Fraenkel himself thought that the transformation of the corpus luteum into a cyst must interfere with the physiological function of this body. He assumed that a deficiency of lutein substance prevents a normal development of the impregnated ovum. But very soon it was discovered that these ovaries do not show a deficiency, but, on the contrary, a very marked increase of lutein cells (Jaffe); and so Pick seemed well justified in forming a new theory. Accepting Fraenkel's claim that the corpus luteum exerts a regulating influence over the growth of the fertilized ovum, he contended that in the cases of hydatiform mole there exists primarily an abnormal augmentation of lutein substance which results in a pathologically increased stimulation of the growing ovum and causes its peculiar degeneration. Pick's theory seemed plausible enough, especially since subsequent investigations have proved the correctness of his observation concerning the actual hyperplasia of lutein substance.

A majority of recent writers had just begun to accept Pick's theory as an established fact, when two publications, one by J. Wallart (*Zeitschrift fuer Geb. und Gyn.*, vol. 53, p. 36), the other by L. Seitz (*Zentralbl. f. Gynaek.*, March 4, 1905), suddenly and unexpectedly disclosed the utter fallacy of this apparently satisfactory interpretation of the relation between lutein cysts and hydatiform mole. These two writers found—and there can hardly be any doubt concerning the reliability of their observations—that the hyperplasia of lutein substance and the formation of lutein cysts in atretic follicles are typical occurrences in the course of every normal and abnormal pregnancy.

Only one who has carefully watched the gynecological literature of the past few years, who has followed step by step the development of this complicated problem and has finally shared the enthusiasm of some of the writers in its happy solution, can appreciate the sad disappointment of seeing this debacle. All the painstaking work, all the ingenious thinking was in vain. The etiology of hydatiform mole is as dark as ever.

SPECIAL NUMBER OF THE LONDON "PRACTITIONER."

The March number of the *Practitioner*, a publication which enjoys a well-deserved reputation among all English-speaking physicians, appeared as a special number devoted entirely to a consideration of puerperal fever. Thirteen articles written by some of the best known obstetricians of England cover the subject in a very complete and satisfactory way. We refer the reader to the department of gynecology and obstetrics of this issue, which contains short abstracts of all these papers.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

Acute Dilatation of the Heart.—STARCK (*Muenchener Medizinische Wochenschrift*, No. 7, 1905).—The question as to whether the human heart can undergo an acute dilatation, and quickly return to its normal size, has been widely discussed of late, but no definite decision has been reached. That the heart can undergo gradual or sudden enlargement as a result of valvular lesions, or muscular involvement, and under proper hygienic and therapeutic measures return to its normal size has been determined without doubt. The view that it can enlarge and diminish in size within a few minutes or hours is as enthusiastically upheld by some as it is opposed by others. Schott conducted a series of experiments on bicycle riders in which he claims to have shown conclusively that such rapid changes can take place in the heart.

The writer reports a case of a student in whom a dilatation of the heart occurred during a duel, and within eight hours returned to its normal size. It is probable that the heart in this case had been greatly weakened by attacks of influenza, scarlatina and enteritis and had often been overtaxed through the exertion of bicycle rides, etc. The author believes that the psychic element played a great role in the production of the sudden cardiac changes. The patient had often undergone physical exertion as severe as on this occasion, but the same mental state did not exist.

The rapid return to the normal size is the point of chief interest in the case.

Albumosuria in Gastro-Intestinal Diseases, Especially Carcinoma.—URY and LILIENTHAL (*Archiv fuer Verdauungs-krankheiten*, Vol. xi, No. 1) find that in two-thirds of all carcinoma cases albumose occurs in the urine. The results of such examinations vary, however, in some cases at different times. In sixty-eight examinations thirty-eight positive reactions were found.

In occasional cases albumosuria is noted in benign gastro-intestinal diseases. In fifty-six examinations, seven cases were found.

The enterogenous albumosuria, in Maixner's sense of the term, seems very improbable. In order to explain the existence of albumosuria in carcinoma of the intestinal tract, the histogenetic origin must be taken into consideration. It must be remembered, however, that frequently in well-advanced degenerated carcinomata, albumosuria may be absent.

An undoubted diagnostic significance cannot be attributed to the albumose determination in the urine in carcinoma of the intestinal tract.

However, its presence upon repeated examinations, should greatly strengthen the probability of the existence of a malignant disease.

Frequent occurrence of albumosuria in febrile diseases seems very probable.

Copious Water-Drinking and Polyuria in Typhoid Fever.—(CUSHING and CLARK (*American Journal of Medical Science*, February, 1905) find that large amounts of fluid are well borne by typhoid patients. They gave from a gallon to a gallon and a half of water through the day, giving four ounces every fifteen minutes. This was given in addition to milk and albumen water. This procedure was tried in a hundred cases and the results were compared with fifty cases in which it was not tried.

They maintain that the patients who received the large quantities of fluid were more comfortable, manifesting fewer toxic nervous symptoms. They maintain, too, that the severity of the disease, and the mortality are reduced in cases in which this method is employed hand-in-hand with the bath.

The Extraction of Foreign Bodies Through the Esophagoscope.—STARCK (*Muenchener Medizinische Wochenschrift*, No. 9, 1905), considers the esophagoscope the surest diagnostic means of determining the position of foreign bodies in the esophagus. The Roentgen rays and soundings are simply aids. The esophagoscope gives information as to the exact topographical position of the foreign body and should be used as early as possible.

The surest and quickest removal of the bodies is through the esophagoscope—any other method of extraction, forcible sounding, any effort to push the object into the stomach must be avoided.

If the effort at extraction through the esophagoscope is not successful, then esophagotomy should be made if the object occupies a position in the upper part of the esophagus and gastrotomy if in the lower.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

The Special Field of Neurological Surgery.—CUSHING (*Bulletin of the Johns Hopkins Hospital*, March 5, 1905)—This article, in addition to being by a very well-known authority on the subject is probably the most comprehensive one of its kind which has appeared. The author gives a general review of the surgery which is applicable to the diseases of the nervous system and at the same time takes the most advanced views. It is encouraging to note that he is much more hopeful than were older authorities as regards the surgery of brain tumors. Indeed, where a radical cure may not be expected, still a palliative operation is strongly urged for the relief of symptoms and this is a matter which does not seem to impress itself strongly upon us. Great care is to be taken in

choosing the site of the opening: that is we must go down over and select a silent field of the cortex and thus avoid a paralysis or other complication. A skull defect underneath the temporal muscle and fascia is least likely to result in hernia. Subdural hemorrhages after fracture at the base are a most thankful field for surgery, as is proven by several interesting cases quoted. This same thought is applicable to new born children whose heads have been injured during delivery. None of the patients on whom Cushing has operated for apoplexy have been benefited, still he has hopes that a more liberal choice of cases may accomplish something in this line. Chloroform has no advantage over ether in brain work. There is less hemorrhages, it is true, but this is accomplished in just the same way as blood letting does it. Where a tumor of the spinal cord is inoperable, the patient may be saved untold suffering by simply dividing the cord an inch or two above the lesion.

Cushing's remarks on nerve suture are certainly most interesting. To him it seemed possible that our suture material may produce so much scar as to defeat the very end at which they are aimed. The entire article is a step in advance of anything in its line and deserves a reading in the original to be appreciated, since a review of so exhaustive a paper must certainly be inadequate.

The Contributions to Surgery of the Hepatic Duct.—(QUENN (*Bulletins et Memoires de la Societe De Chirurgie*, Paris, March 7, 1905).—With the ingenuity of a Frenchman, this author made an anastomosis between the hepatic duct and the stomach. The patient, a woman of forty-three years, had been neurotic for about two years. There had been considerable colic in the upper portion of the abdomen at this time. When the abdomen was opened there was found a greatly indurated area in the head of the pancreas and the gall bladder was decidedly shrunken. The upper portion of the common duct and the hepatic duct were greatly distended and since there was no possibility of using the gall bladder for an external fistula, all that remained was to make the union between the hepatic duct and some adjacent hollow structure. The stomach presents the best chance for the work on account of its easy proximity, hence it was chosen. Two days later the patient died of pneumonia and at the autopsy the anastomosis was found to be perfect. There was no leakage and no peritonitis.

Results of 1500 Operations for a Radical Cure of Hernia in Children.—BULL and COLEY (*Medical Record*, March 18, 1905).—Lessons drawn from such an immense number of cases must be of undoubted value. In cases under four years of age operation is usually not advisable, since a majority of these patients can be cured by a truss. After this age an operation is almost always indicated, since there is practically no danger in it. It is no easier to cure hernia by operative means in children than in adults, and these authors have had a larger per cent. of recurrences in these cases where the cord was not transplanted. Hence, they strongly advise this step in the classical Bassini operation. They do not favor excision of veins. They say that recurrences, if seen at all, are usually in the first six months, and 90 per cent. occur during the first year, if at all. They use as a suture chromicized kangaroo tendons,

which resist absorption from four to six weeks. They emphasize very strongly the impropriety of using a nonabsorbent suture material.

Removal of Vermiform Appendix and Treatment of the Stump.—McLEAN (*The Journal of the Michigan State Medical Society*, March, 1905).—The technique exploited is the tying of a silk ligature around the appendix, and the insertion of a catgut purse-string suture back of this. After the organ has been removed it is tucked in, and the purse-string tied. Surgeons are divided on the question of using catgut or some non-absorbable material for this purse-string suture. Hence, the insertion of the article which immediately follows this as illustrating the subject under discussion.

Care of the Stump in Appendicitis.—CORRUIN (*Colorado Medicine*, Vol. ii., No. 3).—An autopsy was performed on a patient upon whom an uncomplicated appendix operation had been done six days before. The patient did well for five days, when suddenly there was terrific pain, fever, etc., the patient dying twenty-four hours later. The appendix had been tied off with chromicized catgut, and the stump inverted by purse-string suture of the same material. At the autopsy it was found that the purse-string of catgut had given away, and the stump had slipped out of its new bed. Although the catgut ligature had held, the cause of death is sufficiently clear to need no comment. The reviewer is in possession of the histories of similar cases which can be cited for the benefit of those who prefer an absorbent purse-string on the appendix stump.

A Modification of the Bassini Hernia Operation.—POLYA (*Zentralblatt für Chirurgie*, No. 9, 1905).—The author's proposition consists in the following: The cord is brought out in the usual way at the upper end of the muscle opening, and then caused to turn upward instead of downward, and thus hook over a union of aponeurosis with Poupart's ligament. The internal oblique muscle and the lower portion of the rectus sheath, together with the upper flap of aponeurosis, are sutured to Poupart's ligament, the cord is laid upon the bed thus formed, and the lower aponeurosis flap made to overlap it.

Surgical Aspects of Major Neuralgia of the Trigeminal Nerve, with a Report of Twenty Cases of Operation on the Gasserian Ganglion.—HARVEY CUSHING (*Jour. of American Association*, Nos. 10, 11, 12, 13, 14, 1905).—Dr. Cushing once more lays great stress upon the complete removal of the ganglion, something which he was first to do several years ago. Since this is the only certain method of interrupting the sensory impulses, protection of the motor portion seems to Cushing the best reason for dividing the trigeminal root behind the ganglia if it is ever proven that this procedure offers complete relief from pain. Only one out of twenty-three cases has died at the Johns Hopkins Hospital where the Cushing method has been strictly followed, other operations having been attended by a high mortality. The zygoma should be removed after it has been divided, since this procedure minimizes the subsequent

scar. The well-known Cushing method of working beneath the artery certainly affords the easiest and shortest route to the ganglion. The paper is illustrated by photographs of patients taken after operation, showing the anesthetic area in each, as well as photographs of the ganglia illustrating the completeness of the work in each instance.

The post-operative complications are accorded the most exhaustive study, and among them the eye receives special consideration. In two of Dr. Cushing's series, enucleation of the eyeball seemed advisable, but still this cannot offset the relief from pain. The best protection for the eye is a Buller shield, which should be worn for some weeks after the operation.

DIAGNOSIS.

IN CHARGE OF

A. E. TAUSSIG, M. D.

The Diagnosis of Enlarged Bronchial Lymph Nodes.—ALFRED FRIEDLANDER (*Jour. A. M. A.*, No. 1, 1905).—Simple adenitis of the bronchial glands is very frequently only the precursor of the far more serious tuberculous involvement. It is not only true that tuberculous bronchial adenitis is present in at least four-fifths of all cases of tuberculosis in children, but—and this is the more important—it is certain that in the majority of these cases it is the primary lesion. There can be no doubt that many cases of enlarged bronchial glands tend to recovery without subsequent tuberculous infection. The danger of such infection, however, is always present and it is, after all, this factor which makes the condition so grave. Yet, even though it be admitted that tuberculous disease of these glands is enormously common, it is not to be forgotten that this form of tuberculosis, so long as it remains localized, is still decidedly amenable to treatment. Indeed, tuberculosis in infancy and childhood is essentially a disease of lymphatic structures. It may remain so localized for months or years before progressing to other and more incurable forms.

From the viewpoint of prophylaxis, as well as of direct therapy, it is thus very desirable that we should be able to make a definite diagnosis of enlargement of these nodes. While a positive diagnosis is not always possible, there are several symptoms—in some cases even definite physical signs—whose presence justifies the making of a diagnosis on the grounds of probability.

A peculiar paroxysmal cough, resembling that of pertussis, but without the crow, and coming on most frequently at night, is one of the early symptoms. Dyspnoea on slight exertion without demonstrable cardiac lesion, a capricious appetite, anemia without demonstrable cause, a slight afternoon rise of temperature, hoarseness more or less constant, are all suggestive of this affection. Physical examination is usually absolutely negative; when positive, the physical signs of enlarged bronchial nodes are, broadly stated, always those of compression. Dullness on percussion over the sternum behind the manubrium and the upper part of the

gladiolus and extending laterally to either side of the bone is a sign of value. An enlarged thymus produces a similar effect, but the dullness due to this cause rarely extends laterally beyond the margins of the sternum. On the other hand, even large masses of bronchial glands may fail to give rise of an abnormal percussion note. A marked difference between the breath sounds heard over the two lungs is also suggestive of bronchial adenitis. A venous hum, heard over the manubrium when the child's head is bent back, a disappearing as the head returns to the normal position, is very frequently met with when the bronchial nodes are enlarged, and much more rarely in other conditions. Of course, in very advanced stages of glandular enlargement other effects, due to pressure on the cervical veins, bronchi or recurrent laryngeal nerves, may be noted. But in these cases the tuberculous process is usually not limited to the glands themselves.

For the past few years the writer has been making systematic blood examinations in a series of cases of bronchial adenitis. In every case a differential leucocyte count showed a well-marked lymphocytosis. In this connection it must be remembered that normally the per cent. of lymphocytes in a child's blood is distinctly higher than in that of an adult. As the child grows older the proportion of lymphocytes to the other white corpuscles falls, so that in estimating the diagnostic importance of a lymphocytosis, the child's age must be taken into account. In every case examined by the author, the proportion of lymphocytes was much higher than would be normal for an individual of that age. He quotes two cases in which there was a marked fall in the per cent. of lymphocytes, apparently as the result of treatment. In one case, a girl of seven, the per cent. dropped from 64.4 to 48.8; in another, a boy of nine, from nearly 60 to 33.2 within seven months. The writer's cases were too few in number to justify any positive conclusions as to the diagnostic value in the condition of a relative lymphocytosis. His results, however, are suggestive and should lead to further investigation.

A Simple Test for Bile Pigment.—WILHELM PRESSLICH (*Muench. med. Wochenschr.*, No. 5, 1905).—The following test for bile pigment in the urine while not new in principle is simple and delicate, and perhaps deserves mention. If to a conical glass full of icteric urine a few drops of fuming nitric acid be added, the entire lower half of the fluid takes on a beautiful amethyst-green color. The writer has found that this reaction is still well marked when the amount of bile-pigment present is so small that neither Gmelin's test nor that with iodine are clearly positive. On the other hand, neither urobilin nor any of the other substances that may simulate bile pigment give the test. The test, it will be seen, is practically that of Hammarsten (addition of fresh aqua regia to the urine) but is somewhat simpler in execution.

The Laboratory Diagnosis in Diphtheria.—L. SCHAPS (*Arch. f. Kinderheilk.*, No. 2, 1905).—In a Dresden institution for the care of sucklings an epidemic of rhinitis with sero-hemorrhagic discharge, arose. In all these cases diphtheria bacilli were found in the nasal secretion. The same micro-organisms, however, were found in the nasal secretion of a large number of perfectly healthy babies, inmates of the institution.

Moreover, none of those with rhinitis showed any other sign pointing to diphtheria. In no case was any membrane, fever, paralysis or nephritis present. The bacilli were identified as those of Klebs-Loeffler by means of cultures, staining and animal inoculation. The writer concludes that the finding of diphtheria bacilli in an affection of the upper respiratory tract is by no means positive proof that the disease is really diphtheria. The clinical evidence must point the same way. This seems to be the view to which clinicians are coming more and more to adhere.

New Staining Methods for Tubercle Bacilli.—I. S. WILE; A. GABRIELIDES (*N. Y. Med. Jour.*, No. 4, 1905. *Grece Medicale*, iv, No. 23. *Abstr. Jour. A. M. A.*, No. 6, 1905).—Wile's method is as follows: The film is prepared and stained with carbolfuchsin in the usual way, but, instead of using Gabbet's solution, or decolorizing with acid alcohol and counterstaining with Bismarck brown, the smear is drained of excess of carbolfuchsin stain, washed in distilled water, and then plunged repeatedly into Labarraque's solution until the slide presents a uniform brown appearance. The slide is thoroughly washed in distilled water to remove an excess of hypochlorite solution, dried between blotting or filter papers, and examined with a 1-12 immersion lens. The tubercle bacilli appear as red rods on a brown field. Other bacterial forms, with the possible exception of the smegma and lepra bacilli, are brown in color—the red having been altered to brown by the action of Labarraque's solution.

Gabrielides' technic allows the whole procedure to be done in less than thirty seconds. He modifies the Ziehl formula to the following: 1 gm. fuchsin, 10 c.c. of absolute alcohol, 5 gm. of phenic. acid and 40 c.c. of distilled water. He dissolves the fuchsin in the alcohol and mixes the acid with the water, then combines the two and filters. Three drops of this mixture are added to the specimen of sputum, and it is heated for twelve seconds until it steams without burning. The slide is then rinsed and decolorized with 25 per cent. nitric acid in alcohol, rinsed again and stained in methylene blue. The nitric acid decolorizes instantaneously all the elements of the sputum except the bacilli, and the whole process is so rapid that fifteen seconds are ample for the heated sputa and thirty seconds when cold.

A Delicate Test for Bile Pigment in the Urine.—E. RIEGLER (*Rev. pharmac.*, No. 3, 1904; *Muench. med. Wochenschr.*, No. 7, 1905).—As long ago as 1899, the writer published a very delicate test for bile-pigment, based upon the property of paradiazobenzene of giving to an alcohol-chloroform solution of bile pigment an intensely red color. Unfortunately, paradiazobenzene is a very unstable reagent, so that the test has not become generally useful. Recently, however, the writer has discovered that by using two solutions (as in Ehrlich's diazo reaction and in Fehling's solution) the reagent could be prepared fresh for each examination. Two solutions are required:

1. Dissolve 5 g. paranitroamidobenzene in 180 ccm. distilled water; add 25 ccm. pure sulphuric acid and mix.
2. Dissolve 2.5 g. sodium nitrate in 200 ccm. distilled water. Both solutions are stable and may be kept indefinitely.

The test is done as follows: Pour into a test-tube 4-5 ccm. chloroform,

fill up with urine and shake; allow the chloroform to settle and decant the urine; add as much 96 per cent. alcohol as there is chloroform, then five or six drops of each test solution and shake well. In the presence of bile pigment the urine takes on a deep red or orange color. The method is said to be more delicate and more reliable than that of Gmelin.

A Contribution to the Diagnosis of Renal Tuberculosis.—R. MILCHNER (*Berl. klin. Wochenschr.*, 1904, No. 49).—The following case is an example of the error to which the ordinary methods of staining tubercle bacilli may lead, especially if applied to the urine. The patient, a girl eleven years old, suffered from what was thought to be renal tuberculosis. She was emaciated and anemic; the left kidney was enlarged, palpable and tender; the urine was thick with pus, and contained bacilli that stained red with carbol-fuchsin and Gabbet's fluid. A ureteral catheterization showed the left kidney to be severely injured and to be secreting pus, whereas the right kidney was normal. A nephrectomy was done. At the operation, however, no tuberculous kidney but a hydrophyonephrosis, with a kinked ureter, was found. The child recovered rapidly and completely.

The bacilli found were clearly smegma bacilli, for even after the operation they were found in the clear and normal urine as well as in the secretion between the labia. The writer comes to the conclusion that in urino-genital work it is necessary to do animal inoculation for the detection of tubercle bacilli, even if the staining method is positive. We cannot agree with this. If two precautions are taken no confusion between smegma and tubercle bacilli need ever arise:

1. The sediment stained should be that of urine obtained by catheter.
2. After having been decolorized, the spread should be placed for a minute in 95 per cent. alcohol. This decolorizes the smegma bacilli without affecting the tubercle bacilli. Gabbet's method should never be applied to urinary sediments.

THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

Intravenous Injections of Sodium Salicylate.—F. MENDEL (*Muench. med. Wochenschr.*, January 24, 1905, p. 165) has made an extensive study of the intravenous administration of sodium salicylate, and is an ardent advocate of the method, both on account of its very rapid effect in acute rheumatic fever and forms of chronic rheumatism, and because it offers a means of accurately differentiating the arthritides of truly rheumatic origin from the tuberculous, gonorrheal and trophic forms. He summarizes his results in the following paragraphs:

1. The rheumatic pains and the effusions into the affected joints are removed promptly and certainly, even in the cases without fever.

2. The injections are efficient in cases in which both external and internal treatment have failed.

3. They are not followed by the systemic effects which are common after the administration of salicylates by mouth.

The solution used consists of—

R Sodium salicylate.	8.75
Caffein.	1.25
Aq. dist.	50.00

This is sterilized, and is to be used under strict aseptic precautions. The dose for adults is 2 c.c., repeated as necessary at intervals of twelve hours to three days. In very severe cases 4 c.c. may be given. The injection should be made into a vein of either arm or forearm, but never in the veins of the lower extremities, as these are likely to be in a less favorable state of nutrition and, therefore, more likely to become thrombosed. The wall of the vein is rendered tense by applying a tourniquet or pressure bandage at the central end by the extremity chosen for injection, enough pressure being made to obstruct the veins, but not the arterial flow.

Strict asepsis should be observed. Great care should be taken to expel all air from the syringe. Its needle, which must be sharp, should then be passed diagonally through the skin and the vessel wall in the direction of the blood stream. The bandage about the arm should then be loosened, and the solution slowly injected. With careful technique and thorough asepsis, Mendel states, the danger of thrombosis at the site of injection, and a possible embolus, is insignificant.

The Treatment of Epidemic Cerebro-Spinal Meningitis by Diphtheria Antitoxin.—WAITZFELDER (*Med. Record*, March 11, 1905, p. 361), acting on the assertion of Wolff, of Hartford, that the diphtheria antitoxin is antagonistic to the growth of cultures of the diplococcus intracellularis meningitidis, and that marked improvement occurs in cases of cerebro-spinal meningitis after injections of diphtheria antitoxin, employed it in seventeen cases of this disease admitted during his service at the Gouverneur Hospital, New York. His observations are purely clinical. The results he has summarized as follows: Five patients completely recovered, three died, and nine are still under observation. Of the latter, five are rapidly recovering; the other four are in a serious condition. The previous mortality at the Gouverneur Hospital in the present epidemic had been 75 in 113 cases.

The antitoxin should be administered as early in the disease as possible, in doses of 6,000 units for children under five years, 8,000 for children between five and twelve years, and 10,000 units for adults, repeated daily until marked improvement in the symptoms is secured.

In addition to this, the author performed lumbar puncture in all cases where pressure symptoms developed.

Serum Therapy of Scarlet Fever.—W. KOLLY (*Djetskaja Medizina*, 1904, No. 3; *Muench. med. Wochenschr.*, 1905, No. 4, p. 195).—In the Morosow Children's Hospital in Moscow fourteen cases were treated by serum therapy, nine cases by Moser's serum, and five cases by a poly-

valent streptococcus serum. No difference was seen in the action of the two forms of serum. The cases selected were severe, and treatment was begun as early as possible. The majority received 200 c.c. of serum, 100 c.c. at a time. The results were surprisingly favorable; only one death occurred, and that in a case with coincident diphtheria. The first and most striking improvement occurred in the subjective condition, in the nervous symptoms, and in the return of sleep and appetite. In the majority of cases the temperature fell by crisis, without collapse or heart weakness. The pulse became stronger, the respirations less shallow. The eruption disappeared rapidly, but desquamation, when influenced at all, was prolonged. Nephritis developed in no case, and middle ear complications in only four.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

Experimental Measles.—LUDWIG HECTOEN (*The Journ. of Infectious Diseases*, Vol. 2, No. 2).—Hectoen injected in two adults blood of patients suffering from measles. The blood was obtained with the necessary precautions, and added to about a tenfold quantity of an ascites-broth mixture; after incubation at 37° C. for twenty-four hours, a few cc. of the mixture were injected subcutaneously. After a period of incubation, lasting thirteen days in the one case, and eleven in the other, a typical attack of measles developed, but passed off without complications. The author concludes that the results of these two experiments permit the inference that the virus of measles is present in the blood of patients with typical measles sometimes at least during the first thirty hours of the eruption; furthermore, that the virus retains its virulence for at least twenty-four hours when such blood is inoculated into ascites broth and kept at 37° C. This demonstration shows that it is not difficult to obtain the virus of measles unmixed with other microbes and in such form that it may be studied by various methods. The microscopic and the bacteriologic examination of the blood-bouillon mixture were absolutely negative. In connection with this paper, the late publication of Ch. W. Duval (*Virch. Arch.*, Vol. 179, Heft 3), may be mentioned, which deals with the demonstration of the scarlet fever organism of Mallory in the contents of vesicles artificially produced after a very ingenious method in patients suffering with scarlatina. In this fluid Duval has found bodies resembling the formations described by Mallory in the skin of such patients. It is mentioned here as a very ingenious and perfectly harmless method of obtaining serum without the admixture of any cellular elements.

About the Cell-Inclusions Described as Protozoa and Found in Variola.—P. SCHRUMPF (*Virch. Arch.*, Vol. 179, Heft 3).—The object of Schrumpf's work was to inform himself about the nature of the bodies first found

by Guarnieri, then studied by many others, and most recently by Councilman and Bose, who insisted on their having the typical morphologic qualities of protozoa, developing in a cycle analogous to that of these organisms and being the causative agent of variola. The methods of these authors excelled in perfectness and delicacy, and were as such taken as a confirmatory factor for the results obtained. Similar experiments were made with the study of the cancer parasite, where, too, only the finest histologic methods were said to be satisfactory for the demonstration of their presence and their characteristics. But soon we learned that the routine methods were just as satisfactory for this purpose, and that refined procedures did not show anything not discoverable by the others. Schrumpf, too, has used a very simple fixation and staining method, so simple and seemingly ineffective for the purpose, that to the preoccupied mind it at first causes a prejudice. That this is wrong is shown by his pictures which demonstrate the typical forms so well known from Councilman's and Bose's work, but which are accompanied by a text that at least makes it unlikely that we have to deal in them with the pictures of protozoa or parasites. For certain stages the absolute certainty is arrived at that the objects found arise from protoplasmic and nuclear transformations, which makes the same more than likely for the others. To a large extent the work of the authors agrees fully with that published lately by Ewing, which must have been unknown to him, since he does not mention it. Like Ewing, Schrumpf also indicates the absolute lack of anything leading to a belief in a character of these bodies foreign to the tissue cells, and makes his objections against Councilman's explanation of the way of infection in variola.

Culture and Animal Experiments with the *Bacillus Fusiformis* and the *Spirillum*.—D. VESZPREMI (*Centralbl. f. Bact. u. Inf. Krankh.*, Vol. 38, Heft 2, Originale).—From a case of purulent periostitis of the upper jaw, that came to autopsy, Veszpremi inoculated some rabbits with success. One died of purulent peritonitis, in the exudate of which, besides other bacteria, many of the two bacteria of Vincent's angina were seen. Others, inoculated subcutaneously, within a few days developed gangrenous abscesses leading to the death of the animals. Cultures made from the post-mortem material remained negative. From the abscesses of the rabbits, however, the author succeeded in obtaining pure cultures of both forms that in their behavior are described. Rabbits inoculated with these cultures succumbed under the formation of abscesses, and from these again cultures were obtained. The investigations are not concluded as yet, but they have shown that the bacteria of Vincent's angina can be transferred from man to animal, that they produce in the latter the same pathologic condition as in man, that they can be cultivated on artificial media, and that they retain in cultures their original virulence. The paper is of exceeding interest, pathologically and clinically, as, in it, for the first time the direct proof is brought of the causative relation of the Vincent's bacteria to a clinically easily diagnosed condition, for which, so far, no pathologic or bacteriologic basis could be found except the constant superabundance of these micro-organisms in these cases.

The Behavior of Favus and Trichophyton Fungi in the Organism.—J. CITRON (*Zeitsch. J. Hyg. u. Inf. Krankh.*, Vol. 49, Heft 1).—Citron has found that intraperitoneal injection of these fungi causes the production of a pseudo-tuberculous process in the peritoneum and lymphatic glands. The fungi can be demonstrated in the tubercles for many months, and in mamalia there is no indication of phagocytic phenomena. The fungi are simply clumped together and surrounded by leucocytes. Phagocytosis is observed only in the frog, if the fungi are injected into a lymph sac. The injection into mice subcutaneously is followed by the typical disease, infiltration, scab formation, epilation and cicatrization, and for this it is immaterial whether living material or fungi, killed by heating, are used for the injection. Aside from the mechanical effect of the growth of the fungus on the tissues, we must figure with the action of an endotoxin that is present in the mycelium and is thermostabile. The unsatisfactory results of the antiseptic treatment of favus are thus explained, as the death of the fungus does not stop the irritation of the tissues exerted on them by the toxin present in it. A cure can only be achieved by a mechanical removal of the fungus itself. Intraperitoneal injections into mice, made with dead culture material, seemed to produce a certain resistance against subsequent infection. No passive immunization is possible; however, it can be shown that the formation of a specific precipitin is obtained in the course of active immunization.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

Puerperal Fever.—(Special Number of *The Practitioner*. London, March, 1905.)—This number of *The Practitioner* is devoted to a very exhaustive and most interesting consideration of the question of puerperal fever in its various aspects. In the following we give brief abstracts of the thirteen papers.

I. *G. Ernest Herman* considers the *clinical aspects of puerperal fever*. He defines it as a disease which results from the inoculation of wounds with infectious germs. These wounds are on the vulva, in the vagina, or in the cervical canal, the writer apparently forgetting to mention the uterine cavity as a possible entrance into the system for pathogenic germs. The symptomatology of the disease is covered under the following headings: (1) Puerperal Ulcers, which often are called "diphtheric," although they have nothing to do with true diphtheria. (2) Hospital Gangrene, which at the present day is practically extinct. (3) Spreading Traumatic Gangrene, a still more formidable form of hospital gangrene. (4) Sæpæmia, defined by the writer as infection of the blood with toxins produced by saprophytic microbes. The characteristic feature of this disease is the effect of treatment. When the putrid lochia have been washed away, or the decomposing membrane or placenta been removed, rapid improvement at once follows. (5) Septi-

emia may develop from sapremia, if left untreated. In this disease virulent bacteria enter the blood. Death usually occurs before the end of the third day. (6) Pyemia: this disease results from the entry into the blood of pus containing bacteria. The most characteristic feature of this form of puerperal infection is the development of metastatic abscesses, beginning from the sixth to the tenth day. Death usually occurs about the tenth or twelfth day, although some patients may linger on for six or seven weeks. Recovery occasionally occurs. (7) Peritonitis is one of the commonest forms of the disease. (8) Late Peritonitis: at times a focus of pus, situated either in the tube or in the peritoneum between adhesions, may, late in the lying-in period, rupture into the free peritoneal cavity. These cases often can be saved by prompt surgical interference. (9) Pelvic Cellulitis, which seldom proves fatal if treated properly.

[The author's classification varies considerably from that which is adopted by most of the modern writers. It is noteworthy that he does not accept septic endometritis and metritis as a special form, and nowhere mentions the very important symptom of subinvolution of the uterus accompanied by hemorrhages.—Ed.]

II. *Alfred L. Galabin*, the obstetrician of Guy's Hospital in London, describes the modern *treatment of puerperal fever*. He lays special stress upon the microscopical examination of the contents of the uterine cavity, the result of which is of great practical importance for prognosis and treatment. A certain importance must be assigned to the smell of the lochial secretion. If the discharge is offensive, the affection is likely to be due to saprophytes: in very virulent forms of septic infections the discharge may be free from smell. The writer warns against the use of bichloride for uterine douching on account of the great danger of poisoning; he advises, however, on the next page, to use bichloride for the vaginal douche. He mentions in this connection that if a mercurial douche is employed daily, the patient should be given cathartics to secure regular, free action of the bowels. If in a case of fever, subsequent to childbirth, uterine douching is not followed by a prompt improvement, the uterine cavity should be explored at once. The examination is done with the finger, under anesthesia. This early exploration is, unfortunately, often omitted or delayed too long in private practice. Curetting as a routine measure increases rather than diminishes the mortality. Only in those very rare cases of abnormal adherence of the placenta a large, blunt flushing curette may be employed. In the absence of fetid discharge in streptococcal infection, repeated irrigation of the uterus seems contraindicated. It is of main importance to maintain the strength of the patient by abundance of liquid nourishment, given at short intervals. In very severe cases brandy will be useful. The writer emphasizes the value of normal saline solution, given either *per rectum* or hypodermically. The effect of drugs is of less importance, and no drug should be given which is liable to interfere with the patient's appetite. Among medicinal antipyretics, quinine in full doses is the most valuable. Among other medications mention is made of the antistreptococcal serum, nuclein and collargol of Crede. Pus sacs demand operation immediately upon diagnosis. Very little can be ex-

pected from hysterectomy, which, so far, has proved a very dangerous operation.

III. In considering the *prevention of puerperal fever*, *D. Berry Hart* begins with the surprising statement that puerperal septicemia is not an *autogenous* but a *heterogenous* disease, that it is produced by germs introduced from without. The writer seems to be unwilling to accept the views of almost all modern investigators if he says: "No pathogenic germs are found in the healthy genital tract above the level of the hymen and external genitals." In Hart's opinion, as a rule the attendant is responsible for the infection, although personal habits and cleanliness of the patient are of some importance. The means of preventing puerperal septicemia are a general hygiene of the patient during pregnancy, a careful conduct of labor, in which judicious conservatism plays the most important role, and the repair of all lacerations. The author is in favor of one vaginal douche, with hot lysol solution given immediately after labor. Internal examination should be reduced to a minimum and should only be made with rubber gloves. Any man who attends obstetrical cases should handle septic surgical material only with rubber gloves.

IV. *C. J. Cullingworth* gives the *history of the Midwife Act of 1902*. This most important bill, which becomes operative on the first day of April of this year (1905), regulates the practice of midwifery in the United Kingdom. Hereafter the title midwife will be protected and can be used only by women who went through a prescribed training, passed an examination and have registered.

V. *J. Grey Clover* offers some *criticisms of said act*. Its object is to save the lives and health of poor lying-in women. But there is a possibility that as a consequence of this act it may become just as difficult for a poor woman to secure the services of a registered midwife as it is for her at the present day to have a trained hospital nurse or a medical man. A great number of the "untrained" midwives have intimated their intention of retiring from practice, thus the medical officer of one county reports that more than 59 per cent. of the midwives of his district prefer retirement to being supervised. There is danger of a deficiency in the necessary number of midwives. The midwives, according to the rules of this act, are compelled under certain conditions to call in a medical man; there are, however, no provisions made in the bill concerning the remuneration of physicians called upon to attend charity cases.

VI. *A. K. Gordon* gives his *impressions of puerperal septic disease in its more severe forms* as seen in the Isolation Hospital for the City of Manchester. The first thing that is apparent is the fact that the majority of these patients have been attended at the actual confinement by a neighbor, who calls herself and practices as a midwife. "Her practice is often extensive, her fee usually low; she is generally dirty, pig-headed and prematurely aged." The condition of the patient at admission is pitiful the majority being semi-comatose, with a high temperature. Sometimes they are delirious or maniacal; the breath has the sweet odor of septicemia. The abdomen is usually found distended, especially in cases where morphia has been given freely without any attempt at local treatment. The uterus is unduly large and through a dilated os a fetid purulent discharge issues. Generally there is a split cervix, frequently a

ruptured perineum. The writer classes his cases into three groups. In one variety there is a condition of acute septic intoxication, due to retention and decomposition of tissue. Only ten per cent. of his cases belonged to this group—all recovered. Then there is a group of cases of a more purely septicemic type, where nothing is found inside the uterus. Microscopical examination usually shows streptococci. To this variety belonged the majority of cases. Clinically, their condition has been of the typhoid type; about 20 per cent. of them recovered. The third group is formed by cases also of the septicemic type, but which are due to the bacterium coli commune. The prognosis in these cases is almost hopeless, more than half of them died. *This writer uses the curette in every case*, and he lays special stress upon the fact that he uses a "sharp curette, removing the endometrium down to the muscle." He gives an injection of antistreptococcic serum in every case, without waiting for the result of the bacteriological examination.

VII. In an article on the *prevention of puerperal fever in London lying-in hospitals*, William J. Gow justly remarks that the efforts to prevent infection in labor can never be as perfect as in a case of surgical operation. The vulva skin cannot be sterilized, the duration of labor makes the risk of infection so much greater. Infection in labor can, therefore, not always be prevented. The keynote of all prophylaxis is the prevention of an introduction of infective material during ordinary examination, or during operative interference. No undue attempts should be made to hasten labor or the expulsion of the placenta. Perineal and other tears must be carefully sutured.

VIII. E. Hastings Tweedy describes the *asepsis of the famous Rotunda Hospital, of Dublin*, which was erected in the year 1765. One arrangement deserves to be especially mentioned. Each bed is numbered corresponding to one painted on the wall, and neither it or anything appertaining to that bed is permitted to be placed under any other number. Thus the hand basin, buttock basin, mackintoshes and night chamber are all numbered, the result being that a complete control can be kept of the spread of an infection.

IX. Charles E. Paget expects a noticeable effect upon the prevalence of puerperal fever from the control of midwives. Statistics show that the death rate per 1,000 registered births from puerperal septic diseases ranged from 3.0 to 1.4 in the various counties of England, a figure large enough to emphasize the importance of strong efforts towards reducing it. It has been estimated that 60 per cent., and in poorer districts even a larger proportion, of births are attended by women, who act as midwives. The fact that the new bill brings the midwife under supervision and forces her to call upon a physician in complicated cases will, in the writer's opinion, in due time show its marked influence in a reduction of the mortality rate.

X. W. Williams deals with *puerperal septicemia in its public health aspect*. Although puerperal septic diseases are essentially preventable, yet statistics prove conclusively that the mortality of them has not shared the diminution which has been observed in the case of other preventable diseases, such as smallpox, malaria, typhoid fever, etc. In comparing figures, the writer demonstrates the sad fact that for the last twenty years the improvement was practically nil as far as private prac-

tice is concerned, while in the same time the mortality from septicemia in well managed lying-in institutions has decreased almost to a vanishing point. In comparing the statistics of various counties the author can show that the mortality is the largest in districts where it is difficult to procure skilled assistance. He expects a decided change to the better from the new midwife act.

XI. A. G. R. Foulerton considers the *pathology of puerperal fevers*. He dwells upon the difficulty of a concise classification of puerperal fevers for clinical purposes or as a basis for treatment. He denounces the classification of older writers (which, however, is still advocated by some writers in this very number!) into sapremic, septicemic and pyemic types as of little practical value, since they represent only a superficial view of the exact pathological conditions. The processes concerned in the production of the symptoms of puerperal fevers may be schematically and generally represented as follows: (1) Infection of lacerations; (a) localized infection-toxemia; (b) localized infection-toxemia-generalized infection; or (2) primary infection of the contents of the uterus or of the placental site; (a) localized infection-toxemia; (b) localized infection+toxemia+generalized infection.

This scheme is, unfortunately, of but little assistance as a guide to treatment.

In studying the bacteriology of puerperal fevers the writer could prove the predominating importance of the streptococcus. Another result of his investigations differs conspicuously from generally accepted views; it is the author's claim that in a very large proportion of the cases the micrococcus pneumoniae is the infective germ. He, furthermore, never found strictly anaerobic bacteria. While the streptococcus is the commonest cause of primary infection of the puerperal uterus, bacterium coli and pyogenes albus are the bacteria most frequently met with as the presumably secondary elements of mixed puerperal infections. Obviously the author acknowledges the possibility of an auto-infection (which is denied by Hart in paper III of this number). But, while the author believes that the danger of auto-infection is a real one, he is extremely doubtful that anything can be achieved by vaginal douching. In the course of a consideration of the treatment of puerperal fevers he says: In cases in which there is an infection with streptococci, pneumococci or other bacteria which have a tendency to infect the tissues deeply, cutting is to be unreservedly condemned.

XII. The cytological and bacteriological examination of the blood in puerperal fever is, in the opinion of W. D'Este Emery, of rather limited value.

XIII. J. B. Hellier concludes this interesting number by quoting from a description of an epidemic of puerperal fever almost a century ago, reported by William Hey. The method of cure consists, in the opinion of this writer, in large evacuations by bleeding and purging. "They alone will be generally found sufficient if they are employed in a proper and seasonable manner."

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

Concerning Aristochin in Pediatric Practice.—Aristochin (Di-chinin-carbonate) is said to contain 96.1 per cent. of quinine more than any other salt in use. It is absolutely tasteless and odorless, insoluble in water, but easily soluble in alcohol and chloroform. Deutsch (*Centralblatt f. Kinderheilk.* March, 1905), has collected from the literature various observations on the use of this drug in pediatric practice. In pertussis its use has been followed by excellent results. The dose should be somewhat larger than the dose of quinine would be, and its use is never followed by the symptoms of quinine intoxication. It has also been used with good effect in bronchial asthma and in angina. In a series of cases of malaria, its use showed very good results, and very large doses were given without the production of any unpleasant symptoms. The author has also found it to be a very good, and not depressant antipyretic for children.

Comby (*Arch. de Med. des Enf.*, March, 1905), in an article on the treatment of intermittent fever in childhood, says that he has found aristochin of the greatest value in conditions where large doses of quinine were indicated. He regards the drug as being of particular value in pediatric practice.

Aural Affections in Children—Necessity for Their Early Recognition by the General Practitioner.—JARECKY (*Med. News*, March 18, 1905), says that no examination for any inflammatory condition in childhood should be considered complete until the ears have been looked at. Very frequently the seat of trouble will be found to be here, and the early recognition may greatly facilitate the treatment. In the exanthemata, especially in scarlet, repeated examinations should be made. Any unexpected or continued febrile movement during any acute disease, or any unusual restlessness, should attract attention to the ears.

Pathological conditions in the nose, throat and mouth often cause ear trouble secondarily, and these conditions, therefore, demand careful attention. The author's hospital records show that 33 per cent. of the ear patients were children under fourteen years of age, half of whom were suffering from suppurative ear troubles. Of the adults, 25 per cent. were suffering from ear trouble contracted during childhood. The author concludes that:

Early recognition of an ear trouble may prevent pus formation, which proceeds rapidly in children. If pus has formed, attention to it may prevent its toxic absorption. Early paracentesis may prevent a whole train of complications, often very serious.

Partially deaf children should have the nose and throat examined and pathological conditions removed.

In all inflammatory conditions children's ears should be repeatedly examined during the course of the affection.

Results of Fifteen Hundred Operations for the Radical Cure of Hernia in Children.—W. T. BULL and W. B. COLEY (*Med. Record*, March 18, 1905).—From 1890 to 1904, there were treated at the Out-patient Department of the Hospital for Ruptured and Crippled, 53,686 patients with inguinal and femoral hernia. Of these, 15,375 were children under fourteen years of age.

From December, 1891, to October, 1904, 1,500 operations have been done for the radical cure of hernia, all but twenty of them on children under fourteen years of age. With certain exceptions, all children with hernia are treated for one or two years with a truss before advising operation. If at the end of this period no improvement is manifest, the operation is advised. The operation is advised, furthermore, when the following conditions exist, without reference to truss treatment:

1. Cases of strangulated hernia, or cases in which strangulation has occurred or reduction has been effected by taxis.
2. Cases of hernia with reducible hydrocele, or fluid in the hernial sac.
3. Cases of irreducible hernia (rare in children).
4. Cases of femoral hernia, which are practically incurable by truss treatment.

In cases under four years of age, operation is seldom advised, since the chances of cure by truss treatment are far greater in young infants.

While it is true that many cases give a history of relapse after apparent cure by truss treatment, it is also true that about two-thirds of infants under two or three years are cured by truss treatment.

The authors then enter upon a detailed discussion of the various types of hernia encountered and the various operations performed. For these details, the original article must be consulted. It may be noted that of the 1,500 operations there have been six relapses after 1,076 Bassini operations, and five relapses in 125 operations in which the cord was not transplanted. In the series of 1,500 cases, there were four deaths, a mortality of less than three-tenths of 1 per cent. One of the writers has operated upon 800 consecutive cases without a single death.

ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

A Clinical Report of Seventy-five Cases of Arthritis Deformans (Chronic Non-Tubercular Arthritis).—F. L. RICHARDSON, M. D., Boston (*Boston Med. and Sur. Jour.*, March 9, 1905).—The writer states that it was found difficult to apply the terminology used by Goldthwaite, Painter, Garrod and Pribram to many of his cases. He has decided, therefore, to use the term "Arthritis Deformans," first used by Virchow, and lately by McCrea, Walsh, Skinner and Tinker, as it does not assume either clinical or pathological distinctions which have not been accepted by all writers. Occupation, conjugal condition and family history were inves-

tigated, and were not found to bear any definite relationship to the affection. Past history of the cases showed that five cases gave a history of acute rheumatism, in sixteen cases arthritis began while there was a gonorrheal discharge; in only four cases was there any history of syphilis. The age of onset was in the greater number of cases before the sixtieth year, the majority being before the age of fifty. The first joint involved was, in twenty-five cases, the knee; in ten, the spine; in fifteen, the wrist and hand; in six, the ankles and feet, the remainder being scattered. Examination of the blood revealed nothing; of the urine, showed that in no case was the uric acid increased, while in many it was relatively diminished. Clinically, the writer divides the cases into two classes, and states that many of his cases have shown the clinical signs of both.

Group 1.—The cases here are, for the most part, relatively young in years: the first attack of the disease is fairly acute or sub-acute: there is swelling, redness, and at times increased surface temperature, tenderness and pain on motion. Effusion into the joint is not uncommon. The joint shows a fusiform enlargement, which does not seem to be in the bone. Recurrences are not uncommon at intervals of from a few weeks to two years. The joint or joints affected with this disease are permanently injured, and usually there is some, if but little, deformity remaining. The fact that pain in the acute attack is often relieved by salicylates, has led to the confusion of this disease with acute articular rheumatism, salicylates do not tend to lessen the length of the attack or to reduce the deformity.

Group 2.—The cases in this group show crippling of the affected joint with marked deformity of the articular surfaces and new formation of bone, the cases are usually "physiologically old." Heberden's nodes and spondylitis deformans are types of this group. The onset here is insidious, the patient not being aware of the condition till some slight accident calls his attention to the joint. The knee is most frequently involved by this disease, synovial fringes may frequently be felt. In advanced cases there is marked muscular atrophy. Treatment for both classes consists in good hygiene, both local and general. Good, easily digested food in sufficient quantity is essential. It does not seem advisable to cut off any particular class of food stuffs. Drugs appear to have no effect on the course of the disease. The paper is summarized with the statement that we know little of the varied conditions that give rise to the disease, but that as Bradford has suggested there seems to be a close analogy between arthritis deformans and arteriosclerosis. That the disease is the result of some general alteration in the body metabolism seems possible. The history of several of the cases is given in detail, and the paper is illustrated by skiagrams and photographs which show typical lesions.

Cicatricial Contraction of the Hand—Transplantation of Abdominal Flap—Relief.—JAMES S. STONE, M. D., Boston, (*Boston Med. and Surg. Jour.*, March 2, 1905).—The patient in the case reported had her hand caught in a mangle, palm down, against a hot drum; it was held there till the machinery could be stopped, about a minute. The skin of the palm peeled off at the time, adhering to the drum. One year after the wound

was healed and the scar so contracted that the fingers were all tangled together in complete flexion. The operation was to denude the palm of scar tissue, forcibly correct the flexion of the fingers, then to stitch on to the area a flap of skin and subcutaneous tissue dissected from the abdomen directly over the appendix region. The upper and inner edges of this flap were not separated, but the hand was placed under it, palm upward. Sutures were taken and the hand secured in place by a plaster of paris bandage, which encircled the pelvis and abdomen. After seventeen days under an anæsthetic the dressing was removed and the upper and inner border of the flap were cut free. Healing followed with but little sloughing. The hand was kept on a splint for several months. As a result some motion was attained and sensation returned to the transplanted flap.

An Improved X-Ray for the Study of Bone Injuries and Foreign Bodies.—(G. H. STOVER, M. D., Denver, (*Jour. Amer. Med. Ass.*, March 25, 1905).—The difficulty of locating a foreign body accurately, as well as the uncertainty experienced in determining the direction of displaced fragments in cases of fracture, are matters of everyday experience. The author shows that in order to be at all accurate the skiagraph must be used. The fluoroscope is a rough and inexact method, and should not be relied upon. His object is to overcome some of the difficulties met with when a sensitive plate is used, and a permanent record of the condition obtained. He describes a method for taking a stereoscopic skiagraph. A plate holder is placed under the part to be taken; this plate holder is so constructed that a plate in its light proof envelope can be put in and taken out of it without disturbing the patient. The tube is now placed so that its anode is to one side of a perpendicular drawn through the centre of the part to be taken, the first plate is exposed. A new plate is now placed in the holder, the anode is moved to the same relative position on the other side of the perpendicular, and the second plate exposed. These two finished plates are now placed side by side and observed through a special stereoscope. The effect so well known, which is produced by the ordinary parlor stereoscope, is now obtained. The value of the method is shown in several illustrations.

The Technique, Value and Indications for Portable Apparatus Made of Celluloid in Orthopedic Surgery.—Dr. J. D. GHILAMILA of Bucarest (*Revue D'Orthopedie*, March, 1905).—The simplicity with which celluloid apparatus may be made, its lightness, durability, cleanliness and comparative inexpensiveness, all recommend it to use. There are several methods of making the apparatus; one is to use sheets of celluloid; soften these in alcohol and apply them to a cast or positive of the part made of plaster of paris; another method is to apply bandages soaked in a solution of celluloid in acetone. The best method is to take a careful negative of the trunk or limb, make from this a positive cast, then on this cast paint the solution of celluloid on layers of light cloth evenly applied; when dry this is cut off, trimmed to suit, the edges bound, and a perfectly fitting splint or jacket is obtained. These appliances will not absorb water, nor do they rust or tarnish. Hoffa of Berlin has used

this method, as has also Lorenz: Bradford of Boston has employed it for some time with greatest satisfaction.

Partial Separation of the Tibial Tubercle.—G. A. WOLLENBERG (*Deut. med. Woch.*, October 20, 1904).—A case is reported of a man of twenty-three years, who, by a forcible contraction of his quadriceps, ruptured his tibial tubercle. The usual history in these cases is direct violence, often slight. The condition may result from indirect violence, however, as in the case reported. Miller and Schlatter each reported eight cases, from these it would seem that the persons affected are males between the ages of twelve and seventeen; the injury is usually an avulsion of the "beak-shaped" process of the upper tibial epiphysis. In adults the condition is rare, and is a separation of the spine of the tibia; the nearer the individual is to the age when the tubercle of the tibia begins to develop the more easily will only the tip be affected. At the commencement of union between the epiphysis and diaphysis the lesion seems most apt to occur. Prognosis is favorable. Protection and the application of adhesive straps to bring down the "beak-shaped" process is sufficient treatment in most cases. Where the separation is complete, operation is to be considered. After union massage and gymnastics will quickly remove any disability.

Treatment of Stiff Shoulders.—A. SCHANZ (*Archiv. f. Ortho.*, Band 11, Heft 3).—There seems to be a special tendency on the part of the shoulder joint to immobility. This may be accounted for by the fact that the shoulder can be protected from trauma by the ability the patient has to fix the joint and move the scapula. Massage and gentle passive motion will do much for these shoulders. It is better, however, to give an anæsthetic, place the humerus in abduction forcibly and then begin the mobilizing treatment.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

Locomotor Ataxia Successfully Treated with Ultra-Violet Rays.—LIEBERMANN (*New York Med. Jour.*, February 18, 1905).—Attention is called to this article because its publication in a well recognized medical journal might lead the reader to believe that it contained facts which merit publicity. That such is not the case will be apparent to anyone who reads the paper with any sort of discrimination. In the first place, the diagnosis of the cases reported are open to the gravest doubt, and as one reads further and finds that the author's ideas of the pathology of the disease are as hazy and as ill-founded as his diagnosis, one is filled with wonder that such a paper appeared in the journal mentioned. A man who writes on tabs at the present time owes it to his readers, if not to his own conscience, to be at least sincere, for it would be an in-

sult to anyone's intelligence to think that all the misstatements in this article are due to the author's ignorance of the subject he is attempting to write about.

A Case of Myasthenia Gravis, with Autopsy.—BURR (*Journal Nerv. Ment. Diseases*, March, 1905).—This adds one more case to the slowly growing material of autopsy examinations in this disease. The case is interesting, likewise, because it exhibited visual symptoms most frequently found in hysteria and regarded as pathognomic of this disease, namely, contraction of the fields of vision, partial reversal of the red and blue fields and later color confusion. The case otherwise was typical enough. The autopsy showed, beyond an enlarged thymus gland, no pathologic condition of the internal organs. The lesions found in the nervous and muscular systems were perivascular accumulations of free blood cells in the region of the red nucleus and lymphoid infiltration of the muscles. The persistent thymus and the lymphoid infiltration of the muscles are the most consistent lesions found. The changes in the nervous system are not sufficient to explain the symptoms.

The Prognosis of Disseminated Sclerosis.—BRAMWELL (*Rev. Neurology and Psychiatry*, March, 1905).—In as much as disseminated sclerosis is an incurable disease it might be of some interest to find out the duration of the process and what the results of treatment have been. No particular effort has been made to do this before this paper appeared. Bramwell has tabulated the results in this respect of his large personal material, amounting to 110 cases, with the following results: The average duration of the disease in this material is ten years and five months, 35 cases have died, 61 are living, of these 33 are worse, 16 are about the same, 8 are improved and 4 are quite well. Tables are given showing the total duration of the disease in 96 cases and the exact duration in 35 fatal cases. The histories of 4 cases are quoted in which recovery or complete disappearance of symptoms took place for so long a time as to suggest apparent recovery.

Vitiligo and Tumor of the Central Canal of the Cord.—FERRIO (*Rev. Neurologique*, 1905).—This is an interesting observation of a case of vitiligo in a man twenty-nine years old. At the autopsy there was found a tumor occupying the central canal and completely obliterating it. The tumor was a glioma, and did not penetrate into the white substance of the cord at all. While the author is not sure that this was the cause of the vitiligo, its occurrence in this case is extremely suggestive, and he calls attention to the lack of neurological examination in those cases with skin affections of an obviously nervous origin.

Tabes Dorsalis and Psychosis.—BORNSTEIN (*Monat. f. Psych. und Neurologie*, Band 17).—Westphal was the first who brought out the fact of the possible relation of psychoses in the course of tabes as something that might be considered more than a mere coincidence. The relation that exists between tabes and general paralysis has, of course, long been recognized, so that a special term known as tabo-paralysis has been

given to the combination of the two conditions. There is, however, no doubt that there are found mental disturbances in the course of a tabes which have nothing in common with that seen in dementia paralytica. Two cases are here described as a contribution to the subject, and the author concludes as follows: (1) There is not sufficient ground for the assumption that there exists a special tabes psychosis. (2) The largest number of psychical disturbances found in tabes are anomalies of the special senses in the form of hallucinations. (3) The psychical disturbances in tabes should not be looked upon as accidental complication of the disease. (4) The hallucinations are probably due to atrophy of the optic nerve or to sensory disturbances. (5) In cases of tabes in which there is no disposition to psychosis the mental disturbances limit themselves usually to hallucinations without any further psychical disturbances; in those with a hereditary history of mental disease there can develop the most varied psychoses upon the basis of the tabes.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

Anatomy of the Vesical Trigone.—UTEAU (*Ann. des Med. des Org. Urin.*, February 15, 1905).—From examination of 150 fresh bladders the author finds that the measurements of the normal adult trigone usually given are too small. While distention of the bladder increases the area of the trigone, especially in women, contraction of the bladder diminishes it, especially in men. Hypertrophied prostates do not of themselves increase the dimensions of the sides of the triangle, although they often deform the prostatic urethra and vesical floor. Uterine retroversion alters considerably the inter-ureteric distance, and to a less degree the sides of the triangle in women. As a rule, pathological conditions do not alter the extent of the triangle. Anatomical anomalies are not rare in the bladder. While doing cystoscopy we should expect to meet them, and it is very important that we should not allow ourselves to be misled by them.

A New Test for Detecting Minute Quantities of Albumen in Urine—Demonstration with Two Specimens.—RAVOLD (*Jour. Mo. State Med. Assn.*, April, 1905).—This test, known as the Spiegler-Jolles, is made up as follows: Corrosive sublimate, 10 gm.; succinic acid, 20 gm.; sodium chloride, 20 gm.; Water, 500 c. c. Dissolve with heat.

Ravold, finding that this solution was not of sufficient specific gravity to allow one to float upon it urine of high specific gravity without mixing, has overcome this difficulty through the addition of sulphate of magnesium, the method of preparation being as follows: Corrosive sublimate, 2 gm.; succinic acid, 4 gm.; common salt, 4 gm.; water, 50 c. c. Heat. This is added to 50 c. c. of a saturated solution of sulphate of magnesium.

The manner of testing a specimen of urine for albumen is as follows:

The urine is first acidified by adding 1 c. c. of acetic acid to 5 c. c. of urine; filter. Then, by the aid of a pipette, the urine is slowly floated down upon the surface of the reagent in an inclined test tube. If a ring of albumen appears, then heat. The albumen will not disappear. Further examination should be made for globulin, nucleo-albumen or mucin and the albumoses. This test is ten times as delicate as the nitric acid.

Total Enucleation of the Prostate in Advanced Old Age.—FREYER (*Lancet*, London, February 25, 1905).—Out of 134 cases of prostatectomy seven were octogenarians and one was seventy-nine years of age. Of these eight old men seven recovered, and one, having cancer of the prostate, died of heart failure, after recovery from operation. Such recoveries go to show that age is no contraindication to prostatectomy. It is the general condition, and especially the state of the kidneys, that must furnish a guide for operation.

General Gonococcal Infection.—WYNN (*Lancet*, London, February 11, 1905).—Three cases, with autopsy findings are reported, gonococci being demonstrated in the joints, lungs and on the valves of the heart. Enough evidence has accumulated to show that the lesions and symptoms of the general infection depend mainly upon these factors, viz.: (1) Direct infection with the gonococcus itself; (2) an absorption of a toxin, gonotoxin; and (3) mixed infection with other germs. There is now definite evidence that gonococci can circulate in the blood and produce the lesions found in the various organs; there is a true invasion by the organisms.

Such cases show the need for routine examination of the urinary organs, and especially of the prostate, in all cases of pyæmia of obscure causation, just as the middle ear is now always examined in similar cases. Gonococcal infection has no special clinical features which may differentiate it from other pyæmias, and a positive diagnosis can only be made by a bacteriological examination of the blood or any accessible lesions. Stained films of the blood are not sufficient; cultures must be made.

Some Cases of Urethral Stricture Complicated with Prostatic False Route or Passage, with Remarks.—REGINALD HARRISON (*Lancet*, London, February 18, 1905).—Here are given the histories of several cases of urethral stricture in which a false passage was made from the bulbo-membranous junction to the bladder, the urine drawn and subsequently voluntarily passed through this false passage, the patients doing fairly well. The last case occurred in the practice of the writer, and came to him after the false passage had been made. He, however, discovered the true urethral opening, which only admitted a filiform, and by doing an internal urethrotomy with a Maisson neuve urethrotome and supplementing this with an external perineal urethrotomy, finally established the natural channel and cured the patient.

Clinical Examination of the Urine.—CABOT (*Jour. A. M. A.*, March 25, 1905).—After an elaborate exposition of the subject the following summary and conclusions are presented:

1. There are many cases of acute glomerular nephritis which cannot be recognized by any of the methods of examinations known to us.

2. In some cases of subacute and chronic glomerular nephritis our diagnostic resources are likewise at fault, but in the great majority of cases here studied the condition of the urine, taken in connection with other features of the clinical picture, enabled us to anticipate the autopsy findings. Our success in the diagnosis of chronic glomerular nephritis is almost as constant as our failure in the acute cases.

3. When we face the group of chronic interstitial cases, our diagnostic resources appear to be neither as sufficient as in chronic glomerular nephritis nor as inadequate as they were shown to be in the acute cases. In about one-third of the cases the diagnosis was correctly made before death.

4. Among other conditions mistaken for nephritis, owing to the implicit reliance in the urinary findings, we find that the senile and arteriosclerotic degenerations are not infrequently the cause of mistaken diagnosis of chronic nephritis, while in conditions involving passive congestion or acute degeneration of the kidney the urine occasionally simulates that of acute nephritis. Even in cases where no lesions are to be found at autopsy, the urine is occasionally highly albuminous and full of casts.

5. In our ordinary examinations common errors are: (a) The attempt to estimate urea without any accurate knowledge of the patient's metabolism; (b) the statement that renal cells are present when all that we know is that we have seen small mononuclear cells, perhaps belonging to the renal tubules, perhaps not.

6. Cryoscopy and other attempts to test more directly the renal permeability are not as yet capable of supplementing in clinical work the older method of examination in the diagnosis of nephritis.

The vast majority of estimations of urinary solids, including urea, are, in my opinion, a waste of time, since they are not and in most cases cannot be made part of a general metabolism experiment. The attempt to estimate the anatomic condition of the kidney by the measurement of albumen and the search for casts is fallacious in the extreme. The most reliable data about urine are those most simply and quickly obtained—the twenty-four hour quantity, the specific gravity and the color.

Report on Operative Work in the Ureter Through the Author's Catheterizing and Operative Cystoscopes.—LEWIS (*The Lancet-Clinic*, March 4, 1905).—The author describes the uses and methods of manipulating his instrument and his operative work upon the lower end of the ureter, such as the removal of stones, cutting and dilating strictures. A number of interesting cases are reported, and the instruments are illustrated.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

The Nose, Pharynx and Larynx in Hemoptysis, Pharyngitis Hemorrhagica.—PREOBRASHENSKY (*Archiv für Laryngologie und Rhinologie*, Band 17, Heft 1).—The author wishes to emphasize the fact that the lungs are not always at fault where there is an expectoration of blood. He points out that the blood, even when expectorated in considerable amounts, may come from the nose, pharynx or larynx. After reviewing the literature on the reported cases of hemoptysis having their origin in the upper respiratory passages, he reports sixteen cases of his own. In eleven of these the bleeding came from the pharynx and nasopharynx. In three of the cases the hemorrhage had its origin in the larynx, while in the remaining two the bleeding he believed to come from the trachea. In all of the cases prompt recovery followed the employment of local treatment. Preobrashensky concludes as follows: 1. That the origin of hemoptysis is more frequent in the upper air passages than is commonly believed. 2. Most often the bleeding has its origin from some localized inflammatory area, or from a dilated vein. 3. That when a proper diagnosis is made the hemoptysis can be, as a rule, permanently cured. 4. The quantity of blood cannot be taken as a criterion as to its origin, as profuse bleeding may come from the pharynx. 5. The term hemorrhagic pharyngitis should be accepted as well as hemorrhagic laryngitis.

Cure of Two Cases of Bilateral Exophthalmus and One of Chorea by Removal of Adenoids.—HOLZ (*Berliner Klinische Wochenschrift*, January 23, 1905) reports two cases of Basedow's disease in which the diagnosis was based mainly upon the exophthalmus. He believes that the diagnosis of Basedow's disease can be made on the exophthalmus alone, when other causes for the latter can be excluded. In the first case reported by the author the exophthalmus disappeared after the removal of adenoids, recurred with reappearance of the growths and disappeared again after their second removal. In the second case the removal of the tonsils had no effect upon the exophthalmus, but the removal of the adenoids permanently relieved the symptom. He also reports a case of chorea in a child seven years of age, which was permanently relieved by the removal of adenoids. Holz concludes: 1. That an exophthalmus which is not of a mechanical nature is sufficient for a diagnosis of Basedow's disease. 2. That Basedow's disease is due to a poisoning of the central nervous system through abnormal internal secretions. 3. That adenoid vegetations can be the cause of Basedow's disease as well as epilepsy and chorea. 4. That some cases of Basedow's disease, epilepsy and chorea can be cured by the removal of adenoids.

The Radical Operation for Empyema of the Frontal Sinus.—FREUDENTHAL (*Jour. A. M. A.*, February 11, 1905).—The author's paper deals

principally with the chronic forms of suppurative frontal sinusitis. He states that by far the greatest majority of cases improve under intranasal treatment and that we should therefore exhaust all means possible to afford relief by intranasal means. The external operation should be advised. 1. When the purulent discharge is copious and the patient is apparently losing ground. 2. When the discharge is fetid and combined with persistent headache. 3. When the classical symptoms (brain pressure, swelling of the frontal region or dislocation of the eye ball) are present. He points out that there is no one operation that will answer in all cases. Freudenthal concludes as follows: 1. Regarding the conservative treatment of these cases, the remarks of Kuttner of Berlin, are to the point. Every one ought to try and live up to this conservatism as much as feasible. 2. In those cases in which we have to operate, Killian's method seems to give the best results at present. 3. The first opening into the frontal sinus must be below the outlined bridge, and only after exploring the sinus should another be made above it. 4. In the latter case we leave a bony edge which helps toward improving the cosmetic effect. 5. Closing the external wound immediately after the operation is by far preferable for such cosmetic effect.

Examination of the Blood in Children Before and After the Removal of Adenoid Vegetations.—TAKABATKE (*Archives of Otology*, February, 1905). According to Lichtwitz and Sabrazes, who investigated this point in 1900, there was always an improvement in the constituents of the blood. They found that the red corpuscles and the quantity of the hemoglobin were increased, while the number of the white blood corpuscles was diminished. Their examinations were not made at any definite intervals after operation. In order to arrive at definite conclusions the author examined the blood in twelve cases on the twenty-eighth day after operation. He found that the hemoglobin and red blood corpuscles had increased in eight of the cases, while in the others there was a diminution. The number of white cells diminished in all cases. All types of leucocytes were not decreased in the same proportion. The polynuclear and eosinophiles were slightly increased while the large mononuclear cells and the lymphocytes were diminished, but their diminution was greater than the increase of the first named and a general diminution of the white blood cells resulted. The increase of the red cells, together with the diminution of the white, indicate an improved condition of the blood, especially as an approach to the normal took place. The general condition improved and the body weight increased in all of the cases but one. In this one the condition remained stationary.

Ethylchloride in Nose, Throat and Ear Practice.—NEUBORN (*Archiv. fuer Laryngologie*, Band 17, Heft 1) —With an experience of 400 cases, ranging from ten months to sixty-nine years of age, the author warmly recommends the employment of ethylchloride as a general anesthetic for all short operations, such as the removal of adenoids, tonsils, paracentesis of the drum membrane, etc. He employs an Esmarch's chloroform inhaler, using from six to eight layers of gauze in order to prevent the ethylchloride from going through the mask on to the face. From one-half to one gram for children and from five to ten grams for adults is

all that is required for short anesthetics. He always administers the anesthetic in the upright position, regardless as to whether the stomach is full or empty, as he did not have a single case of nausea or vomiting. In nearly all of the cases he observed a tremor of the upper eyelids. The pupils at first dilate slowly and as the anesthesia progresses they rapidly become fully dilated. The face becomes flushed but not cyanotic. The pulse and respiration remain normal as a rule. Complete anesthesia occurs in from one half to a minute and a quarter and lasts from one to five minutes. Consciousness is rapidly regained without any bad after effects. He quotes from the paper of Seitz of Jena on ethylchloride narcosis, in which all of the reported fatal cases are reviewed. These are given in the proportion of one in every sixteen thousand. In conclusion the writer states that the principal advantages of ethylchloride for short operations are, the rapidity of its action, the absence of the stage of excitement and the rapid return of consciousness without any bad after effects.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

MARTIN F. ENGMAN, M. D.

The Structure of Vaccine Bodies in Isolated Cells.—JAMES EWING (*Journal of Medical Research*, February, 1905).—The writer employed many methods to secure isolated epithelial cells free from artefacts for the study of so-called vaccine bodies, but none of the methods used was satisfactory to him until success was obtained by making "Klatseh" preparations of corneal vaccine lesions upon glass slides. In this way he was enabled to completely isolate disease cells by treating them as blood films. By this method several glass slides were thoroughly washed with soap and water, dried and freed from grease by heating in a Bunson flame. To the cornea presenting a vaccine lesion the slide is quickly applied and withdrawn without pressure or lateral motion. The cells are fixed upon the slide by gentle heat and subsequently with absolute alcohol for five minutes, and then stained by Nocht's method. The entire procedure may be completed and specimen ready for examination in ten minutes. If particles of dye adhere to the slide they may be removed by passing through strong alcohol for one minute. By this method the vaccine body and the entire structure of the epithelial cell is presented with a distinctness quite equal to that of the malarial parasite in blood smears, and incomparably superior to that obtained in sections of hardened tissue. It also demonstrates some structures not visible in sections of the cornea. From the advantages of this method the late phases of the vaccine body strongly support the view on chemical grounds, that the structure is an altered portion of the cytotreticulum, and that nuclear elements are concerned in its formation. Basic stain of the homogenous globules is present in many bodies from their early stages, and the gradual transformation of the reticulum into a substance resembling mu-

cus can readily be followed in isolated cells from lesions from four to seven days old. While the nucleus is apparently not much diminished in bulk, when the cells exhibit the large reticulated vaccine body, yet in the last stages the nucleus is usually reduced to a small fragment of its original dimensions. The author concludes by expressing the opinion that some doubt regarding the nature of the vaccine body will probably remain until some method is found by which it may be reproduced apart from vaccinia. Accumulated evidence goes to show that the toxin is specific for vaccinia and variola and no satisfactory hypothesis remains in view if this body is eliminated as an etiological factor in the disease. That its reproduction by other means can ever be satisfactorily accomplished seems very doubtful, since specific forms of degeneration are frequent features of infectious processes.

Implantation of Tissue and Its Relation to Cancer.—EDWARD H. NICHOLS (*Journal of Medical Research*, January, 1905).—The results of a series of implantations of tissue in sixty-two animals are given in this article. Both adult and fetal tissues were used. The implanted tissues were chiefly epithelial or mesenchymal tissues set free from their normal environment could acquire the power of unlimited growth and give rise to the formation of metastases. In some cases the implanted tissues proliferated, maintained their vitality and produced nodules analogous to dermoid cysts, and some were of large size. In no case was any nodule produced with unlimited growth or the formation of local or glandular metastases. The following conclusions are given as the result of this study:

1. Certain types of epithelia (epidermis), both adult and fetal, can be experimentally removed from their normal position and implanted into another part of the same animal, and under those circumstances can maintain their "potentiality of growth," retain their peculiar character and produce nodules analogous to dermoid cysts or more complicated teratomata.

2. In no case has any epithelia of a highly differentiated function been seen to maintain its power of growth or to proliferate.

3. The "potentiality of growth" is greater in the case of fetal than it is in that of adult tissues.

4. In no case has any infiltration of surrounding tissue by the transplanted epithelia been seen, nor any tendency to epithelial metastases.

5. Certain fetal connective tissues (cartilage) can be transplanted in the same way as epithelial tissues and maintain their "potentiality of growth."

6. Transplanted fetal tissues do not reproduce the stage of development at which they are transplanted, but tend to produce the ultimate stage of their normal development.

Fordyce's Disease.—C. J. WHITE (*Journal of Cutaneous Diseases*, March, 1905).—From the study of fifty-five cases of this disease of the lips originally described by Fordyce, an analysis of the results produces the facts that the disease consists of the presence of small, irregular macules or papules. The lesions vary in size from a pin point to a pin head. They are irregular, round and polygonal—like a mosaic. They may range

from yellow to pale buff in color. They are usually imperceptible to the touch except on the lower lip, when they sometimes assume a dome shape. They vary from a few lesions to a well-defined band, the length of the lip. Their presence in most instances is unknown to the patient, and they are in most instances upon the lower lip. The author believes, from the reason that about 70 per cent. of these people suffer from diseases which are intimately associated with the sebaceous glands, that the disease is closely connected with eczema seborrhœica rosacea, and possibly dyspepsia. Histologically, he finds changes analogous to this disease, the principal histologic factor being a ballooned and greatly swollen epidermis as well producing the reticulated degeneration seen in variola and some other diseases. He does not agree with more recent writers, who declare this disease is pathologically a sebaceous tumor, as it lies beyond the sebaceous tissue proper. On the other hand, he finds the essential change to consist of acethosis edema paraperatosi. In other words, he finds exactly similar conditions to those described by Fordyce, the original observer of the disease. Clinically, the cases with their possibly persistent dyspepsia and concomitant seborrhœic disease, would tend to strengthen the pathologic findings of those writers who would call the disease acne rosacea of the mucous membranes. Pathologically, however, the sections counteract this view absolutely, as the sebaceous glands lie wholly beyond the boundaries of the disease proper.

The Nature of Cell Inclusions in Cancer.—ROBERT B. GREENOUGH (*Journal of Medical Research*, January, 1905).—In the present communication it is the purpose of the writer to record the results of further observations, to assemble some of the observations of others and to review the secretion hypothesis as it now stands. In this extensive work the following conclusions are given:

1. The double cell inclusions of cancer are practically constant in cancer of glandular origin.
2. They are not found in epithelioma and are almost invariably present in sarcoma.
3. Their size, structure and staining reactions are such as to justify the assumption that they are vacuoles in the cell protoplasm, containing a material which is coagulated and shrunk by the use of tissue fixatives.
4. The occurrence of vacuoles of this nature is chiefly a phenomenon of cell secretion.
5. Similar vacuoles may be produced, however, in certain cases of phagocytosis, and by the degeneration of the nucleus.
6. Secretion vacuoles of the form of typical cancer cell inclusions are found in certain non-cancerous diseases of the mammary gland.
7. In such cases the secretion vacuole is between the nucleus and the lumen of the gland.
8. The inclusions in adeno-carcinoma occupy a similar position between the nucleus and the lumen of the gland.
9. In more advanced carcinoma the gland lumen is lost. The secretion vacuole cannot escape and remains within the cancer cell to undergo further increase and ultimate degeneration.
10. Cell secretion is a phenomenon which is lost in the progressive anaplasia of cancer cells.

11. Cell inclusions are more frequent in slow growing cancer and are less numerous in advanced cancer with rapid cell division.

12. No reason exists for the interpretation of these appearances as of parasitic origin.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

On Transillumination of the Sclerotic.—SWANZY (*Ophthalmic Review*, February, 1905).—Leber's instrument for transillumination of the sclerotic is described. It consists of a metal capsule enclosing a small electric lamp, the anterior end of which is in contact with a short glass rod

The exposed end of the rod is placed against the sclerotic of the cocaineized eye and the light turned on. If the eye is normal or even if a ripe cataract be present the pupil lights with the familiar red glow from the choroid. Should an intraocular new growth be present internal to the spot on which the glass rod is applied, the pupil remains dark. It occasionally happens that the rod must be slipped over the whole region of the exposed sclera before the search for the tumor is successful. If, after careful search, no such spot is found it is concluded that no tumor is present in the region which can be reached with the glass rod.

Transillumination is of the greatest value in cases where there exists a strong suspicion of the presence of a tumor, but where, owing to opacity of the media or detachment of the retina an ophthalmoscopic examination fails to throw light on the subject. The method is, of course, limited to the detection of tumors anterior to the equator of the globe, *i. e.*, to the region where the glass rod can be brought in contact with the sclerotic.

A New Operation on the Ocular Muscles—Muscle Lengthening.—LANDOLT (*Arch. d'Ophthalm.*, January, 1905), whose views in opposition to muscle-cutting are well known, describes an operation which he practices in inveterate cases of convergent squint with marked contracture of the muscle accompanied by change of structure and loss of elasticity. His device, which is supplementary to the advancement of the opposing muscles, consists in lengthening the internus by methods similar to those in vogue among orthopedic surgeons.

The muscle having been exposed by a longitudinal incision through the conjunctiva is incised longitudinally and transversely so as to form a "step." One section is then slid over the other and the two are sutured end-to-end. A modification consists in making an oblique incision from one side of the muscle to the other, sliding and suturing as before.

It is needless to say that the operation is an exceedingly delicate one. The muscle is put on a stretch with a squint hook and the assistant draws the eye as far as possible in the direction opposite to the action of the muscle. Sutures should be inserted in the posterior section before the division of the muscle. The advantages of the operation over

tenotomy are twofold: (1) The scleral attachment is not disturbed, and (2) the normal extent of rotation of the ocular globe is not impaired.

Saccharine Saline Injections in Ophthalmic Practice (Sodium Benzoyl-Sulphonic).—L. WEBSTER FOX (*Ophthalmology*, October, 1904).—Subconjunctival injections of this drug in the strength of five, ten and fifteen grains to the ounce are advocated by Fox in various ocular troubles. The injections are given once or twice a week for six to twelve treatments. Their efficacy is conspicuously manifest in the following conditions:

1. Vitreous opacities following any form of vitreous, retinal or choroidal disease.
2. Interstitial keratitis. Haziness of the cornea remaining after subsidence of the acute attack was found to clear surprisingly.
3. Notable improvement in every case of corneal opacity secondary to prolonged corneal disease.

The Environment and Visual Requirements of Railway Enginemen and Firemen.—N. M. BLACK (*Jour. A. M. A.*, February 18, 1905).—The writer's paper is based on personal observations from an engine cab, in which he traveled for upward of five thousand miles. It is freely illustrated with photographs, which depict various extraneous conditions interfering with the quick determination of signals when the train is running at a high rate of speed. Dr. Black's conclusions are as follows:

1. The best known standard of visual acuity and color perception should be required of men concerned in the active operation of trains.

2. The signal systems now in vogue, while they are not perfect, are sufficiently adequate for the standard of vision required and the present speed of trains.

3. Certain physical and accidental conditions about engines interfering with vision cannot be overcome unless the position of the enginemen can be changed.

4. Certain atmospheric conditions interfering with vision cannot be overcome; others can be mitigated or entirely relieved by the use of some form of protection to the eyes.

5. Glasses are not a hindrance to enginemen, and their use should be allowed when required to protect the eyes or to bring the vision up to required standard, but no person should be accepted into service requiring them or who will accept a plus lens of $1\frac{1}{2}$ or 2 D.

6. With four reports emanating from four different sources of equal merit and standing, and all different in small details, the obtaining of perfect uniformity in examination of railway employes is out of the question, as it cannot be expected that the officials of different roads will all decide on the same report.

7. Furthermore, state legislation on the subject of vision and color perception of railway employes is being seriously considered, two states, Massachusetts and Ohio, having statutes regulating this. As nearly all railroads pass through a number of states, it would be well for the societies from which these reports emanate to agree in all details, as the state laws will necessarily be based on them, and if different states have different standards an engineman qualifying in one and not in another, with his run extending in both, would be in serious difficulty.

BOOK REVIEWS.

VON BERGMANN'S SURGERY. A System of Practical Surgery. By DRs. E. VON BERGMANN, of Berlin; P. VON BRUNS, of Tuebingen, and J. VON MIKULICZ, of Breslau. Edited by William T. Bull, M. D., Professor of Surgery in the College of Physicians and Surgeons (Columbia University), New York. To be complete in five imperial octavo volumes, containing over 4,000 pages, 1,600 engravings and 110 full-page plates in colors and monochrome. Sold by subscription only. Per volume, cloth, \$6.00; leather, \$7.00; half morocco, \$8.50, net.

When the first edition of this large and exhaustive work was placed upon the market in Germany, in 1901, the demand for it was instantaneous; in fact, the first edition was rapidly exhausted, and the second soon after undertaken. This second edition was a rearrangement of and an improvement upon the first, consequently we may be said to profit by the fact that our translation is of the more recent and not of the older number. We have something more than a translation, for the American editors have added to the original, both as regards text and illustrations, much that is new and useful from the literature of Germany, England and America. As to the size of the work, something must be said; it consists of five large volumes, and hence can present each subject so fully in the space thus at command that it can be truly said, with the editors, to be encyclopedic in character. Not only is each author able to give his own preferred method of treatment in a given case, but he can at the same time outline all the best ideas, and thus the practical surgeon has a work of value at his command when the ordinary text-book can do no more than fill the wants of the student or of the general practitioner at most. Surgeons will be pleased to note that the wearisome chapters, usually repetitions, on general subjects, such as anæsthesia, hæmorrhage, antiseptics, etc., have been omitted; in fact, there is no dead wood or padding in the book. It is essentially clinical in nature, so intended for the man who is at work, and that the clinical material contained might have the greatest possible value, a different German surgeon was chosen to write each chapter, and every writer is a master in his field. This phase of the subject will be readily appreciated when it is seen that Bergmann and Kroenlein wrote much of the surgery of the head, Krause that of the Gasserian ganglion, Schede that of the kidney, Sonnenburg that of the bladder and prostate, Koerte that of the peritoneum, Mikulicz that of the stomach and intestines, Kehr that of the biliary passages and gall bladder, Bruns that of the larynx, Eiselberg that of the thyroid and Hacker that of the esophagus. Each of these men has, to a large extent, made his reputation by work upon the subject connected with his name in this list, hence it is readily appreciated that the reader has access to a group of monographs, each written by one of the leading surgical lights of Germany. There are, in addition to the list above, many less well known names of men who have done most excellent original work upon the subjects allotted to them. In keeping with the well known continental idea, the various sub-chapters allotted to the individual writers are grouped under their various general headings in different volumes as follows: No. 1 treats of the head, No. 2 of the neck, thorax and spinal column, No. 3 extremities, No. 4 of the alimentary tract, No. 5 of the genito-urinary organs. The arrangement of the original has been somewhat changed, but the reviewer considers that the work has been improved thereby. One decided improvement on the German edition consists in the addition of an index at the end of each volume; the foreign edition had but one general index at the end of the whole work, thus making it necessary to look in the last volume to ascertain the location of material contained in any one. A more adequate idea of the size of the undertaking is gained when it is explained that there are 4,220 pages and 1,976 illustrations; at the same time it may be said that the technical work exhibited is of the best. It may be said, with regard to size as well as to quality, that this system of practical surgery more nearly than any other one work represents modern surgery; there may be some faults and flaws in it, but for general excellence as well as for the high standing of its authors, it probably stands without a rival today. It seems unnecessary to go into details as to the contents of the various chapters; it is enough to state that every part of the body is apportioned to an authority on the same, and that the injuries, as well as the diseases to which it is likely, are considered fully and in a masterly manner.

NOTHNAGEL'S PRACTICE. American Edition. Diseases of the Intestines and Peritoneum. By Dr. HERMANN NOTHNAGEL, of Vienna. The entire volume edited, with additions, by HUMPHREY D. ROLLISTON. Octavo volume of 1032 pages, fully illustrated. W. B. Saunders & Co., Publishers, Philadelphia, New York and London. 1904.

This, one of the most valuable volumes in the Nothnagel series, is by the famous clinician, Prof. Nothnagel himself. It is one of the most exhaustive treatises on the subject of the intestines and peritoneum ever published, and is written by one whose authority on these subjects is undisputed. Almost 700 pages are devoted to the diseases of the intestines alone, and practically every known disease of these organs is treated in detail. Not the least important feature of the work is the exhaustive bibliography.

Editorial editions include sections on intestinal sand, sprue, ulcerative colitis, and idiopathic dilatation of the colon. Appendicitis and peritonitis have been given unusual space. Appendicitis is discussed under the general head of acute circumscribed peritonitis, and is defined as an "inflammation of the peritoneum starting from the intestine in the right iliac fossa." We often find this subject considered under the head of inflammations of the mucous membrane. The disposition of the subject in this work, however, seems to be the better one, since the peritoneal involvement in appendicitis, though secondary in point of time, is primary in point of importance.

The author regrets the adoption of the term appendicitis because it is a Latin word with a Greek termination, and suggests the term "seoleccoiditis." The volume is full of innovations, and is written in a very interesting style.

NOTHNAGEL'S PRACTICE. American edition. Diseases of the Pancreas, Suprarenal Capsules and Liver. By Drs. L. OSER and E. NEUSSER, of Vienna, and Drs. H. QUINCKE and G. HOPPE-SEYLER, of Kiel. Edited, with additions, by Dr. Reginald H. Fitz and Frederick A. Packard, under the editorial supervision of Dr. Alfred Stengel. W. B. Saunders & Co., Philadelphia.

One who has endeavored to follow the progress made in recent years in the diseases of the pancreas, liver and the suprarenal glands can fully appreciate a volume of this sort. In this work some of the greatest authorities on these subjects have condensed and interpreted the work of many men and many years in a most satisfactory manner. Prof. Oser is the author of the section on the pancreas, and has presented a most complete exposition of the subject. Until a few years ago reliable literature on pancreatic diseases was very meagre; 300 pages are devoted to the subject in this work, the bibliography alone comprising some thirty pages. The anatomy, physiology, pathology and the results of recent experiments are all carefully considered, together with the symptomatology and treatment of the several diseases.

The section on diseases of the suprarenal glands is also complete. However, our knowledge of this subject is not all that could be desired. About thirty pages are devoted to a consideration of the anatomy, physiology, pathologic anatomy and the therapeutic properties of the suprarenal glands.

The section on diseases of the liver covers six hundred pages, and is complete in every detail. The names of Quincke and Hoppe-Seyler are so closely associated with the progress on this subject that little need be said in praise of this section of the work. The diseases of the bile passages as well as of the liver are carefully and concisely presented.

NOTHNAGEL'S PRACTICE. American edition. Tuberculosis and Acute General Miliary Tuberculosis. By Dr. G. CORNET, Berlin. Edited, with additions, by Walter B. James, M. D., New York. Authorized translation from the German under the editorial supervision of Alfred Stengel, M. D. W. B. Saunders & Co., Philadelphia. 1904.

No work could prove more valuable to the physician at this time than a comprehensive treatise on tuberculosis, reviewing in full the evolution of our knowledge on this subject. Such a one is the work presented by Prof. Cornet. The recent developments with reference to the treatment of tuberculosis have given a new impetus to the subject in general, and scientists and laymen are manifesting such an interest in this disease in its relation to the public welfare as has never been known before. Scientists, philanthropists, states and nations are uniting in their efforts to subdue "the white plague." This volume deals with the subject in its every phase.

Chapters are devoted to an historical survey, to the tubercle bacillus, its morphology, its biology and its chemistry, to the pathological processes, to the modes of invasion, to infection, to heredity and to predisposition. About 300 pages are devoted to pulmonary tuberculosis alone, and in this section a most comprehensive view of the treatment of the disease according to the most approved methods are presented. Not the least important feature of the work is the very exhaustive bibliography, to which is devoted almost one hundred pages.

Part three is devoted to acute general miliary tuberculosis. The work as a whole is probably the most complete treatise on this subject in existence.

REFRACTION AND HOW TO REFRACT. Including Sections on Optics, Retinoscopy, the Fitting of Spectacles and Eyeglasses, etc. By JAMES THORINGTON, A. M., M. D., Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Third edition, 215 illustrations, 13 of which are colored. 314 pages. Price, \$1.50 net. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut street. 1904.

Dr. Thorington's excellent manual, which has now reached a third edition, hardly needs an introduction to the student of ophthalmology. The work is based on the author's lectures on refraction, delivered at the Philadelphia Polyclinic, and is intended for all beginners in ophthalmology, especially for those who have a limited knowledge of mathematics. The book is eminently systematic and practical. For the present edition the author has gone over the text very carefully and has added fifteen new illustrations, together with a description of several new instruments which have lately been brought forward as material aids in estimating refractive errors. Emphasis is laid on the necessity for the utmost exactness in determining the refraction. The book can be recommended without reserve.

NOTES FOR THE GUIDANCE OF AUTHORS IN THE SUBMISSION OF MANUSCRIPTS TO PUBLISHERS. The Macmillan Co., New York. 1905.

A convenient booklet, giving general directions for the preparation of manuscript, proof-readers' marks, words frequently misspelled, and the like.

DAS SEXUELLE LEBEN DER CHRISTLICHEN CULTURVOELKER. Von DR. JOSEF MUELLER, Leipzig. Th. Grieben's Verlag (L. Fernau). 1904. Price, Mk.4.

This is the third and last volume of a series devoted to a history of the sexual life from the oldest times to the present day. This volume elucidates the development of morality, in its broadest sense, under the influence of the teachings of the Christian religions. Mueller begins with the time of Christ and the apostles, and explains the doctrines advocated by them regarding marriage, celibacy, virginity, etc. After a consideration of the German influence at the beginning of the Middle Ages, with a very instructive chapter on knights and monks, the writer next describes the radical changes which took place during the time of the Reformation. He devotes a special chapter to a comparison of the Catholic and Protestant views on sexual morality. Of special interest for the physician is the last chapter, in which the author argues against the attempts at a reform of marriage on the grounds that monogamy leads to a degeneration of the race.

The volume before us offers very interesting reading, and forms a most valuable document for the modern tendency to improve sexual hygiene by the propagation of better information on the subject.

A COMPEND OF THE PRACTICE OF MEDICINE. By DANIEL E. HUGHES. M. D. P. Blakiston's Son & Co., Philadelphia. 1904.

On reading a book of this sort one wonders to what portion of the medical public it can appeal. It does not contain the sort of information for which a practitioner is apt to consult a book of reference, and in its brevity and dogmatism it is a vicious book to put into the hands of a medical student. Examples of what is meant can be found on nearly every page. Thus, at random, on page 11 a list is given of temperatures with the corresponding pulses, without a word about the many physiologic exceptions to such a rule. On the same page the reader is advised to give aconite or veratrum viride when the pulse is full, strong and rapid, and cardiac tonics whenever it is weak—advice directly opposed to the best practice. On page 17, in enumerating the possible agents of typhoid infection, no mention is made of direct contagion on the part of those handling the excreta. In describing the diazo-reaction, a brownish-red ring is made the criterion of a positive test. Similar examples might be enumerated indefinitely. Poor judgment is used in the space given to various subjects. Thus, an entire page is devoted to Warburg's tincture, whereas not a word is said regarding the differential diagnosis between gall-stones and pancreatic disease. The style and grammar, too, are not above criticism, the split infinitive being very common. It is a sad commentary on American medical literature that this book is now being issued in its seventh edition.

DIÄTETISCHES KOCHBUCH. Von Dr. OTTO DORNBLUETH. Second edition. Würzburg: A. Stubers Verlag (C. Kabitzsch). 1905.

This little book is by far the best medical cook-book that has come to our attention. Many of the recipes will seem strange to American readers, being typically German, but they will be found tasty and easily digestible. An excellent division is devoted to the consideration of special dietetics. The directions for preparing palatable dishes for diabetics will be found particularly valuable. The little book well merits translation.

A PRACTICAL TREATISE ON MEDICAL DIAGNOSIS. By JOHN H. MUSSER. M. D. Fifth edition. Lea Bros. & Co., Philadelphia—New York. 1904.

Musser's *Diagnosis* is so well known to the medical profession that this new edition does not require extensive discussion. Suffice it to say that it is as entirely abreast of the times as its predecessors, and that in it the reader will find most of the newer diagnostic methods as well as the best of the old. The illustrations are of a high grade of excellence.

NORMAL HISTOLOGY AND MICROSCOPICAL ANATOMY. By JEREMIAH S. FERGUSON. M. D. New York and London: D. Appleton & Co. 1905.

On 738 pages, and by means of 462 partly colored illustrations, the author gives an up-to-date presentation of the subject. There is no objection to be made against the way in which this is done, and only here and there an objection to some illustrations. The contents of the book really give a good picture of our knowledge on histology, and therefore, as such, must be recommended. The question arises, however, whether such books were not on hand, whether there was a necessity for this one, to increase the literature on the subject by the addition of one large volume. This necessity is certainly not present, as the last years have brought us a number of classic treatises on the subject from authoritative sources, that for a long time to come will supply all the desire for information on it. Although Ferguson's book is good and authoritative, it does not bring anything that would not be found in books already published. The appended chapter on technic is too condensed to be of any value, and would have been better omitted.

UEBER DIE NEBENWIRKUNGEN DER MODERNEN ARZNEIMITTEL, VON PROF. DR. OTTO SEIFERT. Wuerzburger Abhandlungen aus dem Gesamtgebiet der Praktischen Medizin. V. Band, Heft. 1. Wuerzburg, A. Stuber's Verlag (C. Kabitzsch). 1904.

The rapid increase in the number of new remedies has necessitated a new edition of Seifert's monograph three years after the first one was issued. On looking it over one obtains rather a gloomy impression as regards the value of most of our therapeutic novelties. Very few of them it would seem are free from serious defects, either as regards certainty of effect or safety of administration. Thus, to select a few examples, a host of observers has reported unpleasant after effects of aspirin; euquinin has the same drawbacks as quinine; salipyrin is a dangerous drug; anesthesin, otherwise valuable, may create a habit; orthoform may be very toxic; theocin may give rise to severe digestive and nervous disturbances, etc., etc. Perhaps the most valuable feature of the book is the critical discussion at the end of each chapter. Readers of German will find the little volume of interest.

MEDICAL LABORATORY. Methods and Tests. By HERBERT FRENCH, M. D., London. Publishers: W. T. Keener & Co., Chicago. Price, \$1.50.

This little volume contains a collection of the more common chemical tests used in the examination of urine, blood, sputum, feces, gastric contents and serous exudations. Short descriptions are given of the microscopical pictures of these substances. Briefly, the conclusions are pointed out which may be drawn from these tests and examinations, special stress being laid upon the fallacies to which each is liable.

A TEXT-BOOK OF CLINICAL DIAGNOSIS BY LABORATORY METHODS. By L. NAPOLEON BOSTON, A. M., M. D. Pages 549, with 320 illustrations, many of them in colors. W. B. Saunders & Co., Philadelphia. New York and London. 1904.

Few books on clinical diagnosis can be so unreservedly commended as this one. It is thoroughly up to date in every respect, and contains practically every laboratory method of diagnostic importance. The chapters on the blood are particularly complete and interesting. All the important hemoglobinometers and other apparatus, all the useful stains and the like, are discussed in detail. It is somewhat surprising that a paragraph of text and a full page color plate should be devoted to Anderson's piroplasma hominis, in view of the strong suspicion, to say the least, that exists that mountain spotted fever is merely a form of cerebro spinal meningitis, and that Anderson's parasites are merely artefacts. Errors of this sort are, however, an almost unavoidable result of the effort to include the most recent researches. The general make-up of the book deserves all praise. It is well printed on dull paper, and the illustrations are of peculiar excellence, the colored plates depicting the blood, resembling the actual appearance under the microscope very closely. An elaborate index greatly increases the value of the book.

THE SEXUAL LIFE. By C. W. MALCHOW, M. D. The Burton Co., Publishers, Minneapolis, Minn. 1904.

It may be taken for granted that any serious and exact study of sexual matters will not always be given general approval. Only too often the motives of the authors of such books, abounding with histories of "interesting" cases, are decidedly objectionable. This volume, dedicated by the writer to his mother, is exempt from any suspicion. It presents a scientific consideration of the natural sexual impulse, of normal sexual habits and propagation, and of the physiology and hygiene of sexual life. There cannot be any doubt but that there is need for such a book. The importance of sexual anomalies in the etiology of various diseases is at the present day well recognized, and it falls into the domain of every practitioner to seek information on the normal and abnormal action of the sexual instinct.

BEFRUCHTUNG UND GESCHLECHTSBILDUNG. Von PROFESSOR DR. HEINRICH BAYER. Verlag von Schlesier & Schweikhardt in Strassburg. 1904. \$0.40.

This is a most interesting little monograph, in which the writer deals with the much discussed question of the determination of the sex of the fetus. He attempts to furnish convincing proof for his theory, that the sex is determined in the moment of impregnation. The union of the centrosomes of spermatozoid and ovicell conveys to the latter not only the faculty but also the direction of further development.

DISEASES OF THE NOSE AND THROAT. By D. BRADEN KYLE, M. D., Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia. Third edition, thoroughly revised and enlarged. Octavo volume of 669 pages, with 175 illustrations and 6 chromolithographic plates. Philadelphia, New York and London: W. B. Saunders & Co. 1904. Cloth, \$4.00 net; sheep or half Morocco, \$5.00 net.

This (the third) edition of Kyle's work has not been materially altered. The entire book has, however, been carefully revised and such additions have been made as were rendered necessary by recent medical progress. The most important changes and additions have been made in the chapters on keratosis, epidemic influenza, Gesuny's paraffine method for the correction of nasal deformities, and in the one on the x-rays in the treatment of carcinoma. The etiology and treatment of hay fever have been partially rewritten and much enlarged, as has also the operative treatment of deformities of the nasal septum. In the chapter devoted to general considerations of mucous membranes and hay fever the author records the results of his experience in the chemistry of the saliva and nasal secretions in relation to diagnosis and treatment. Kyle believes that the examination of the saliva will often give more real information than an examination of the urine. The classification of diseases is very complete, and the descriptions are clear. As for treatment, the medical side is discussed at length, whereas the surgical, especially the operative technique, is very briefly considered. As a whole, this work must be considered one of the best of modern text-books on diseases of the nose and throat.

THE NOSE AND THROAT IN MEDICAL HISTORY. By JONATHAN WRIGHT, M. D., Attending Laryngologist to King's County Hospital. Fifty illustrations. Published by the Laryngoscope Co., St. Louis, Mo. Price, \$2.00 net.

In linking together the records of the nose and throat in the history of medicine the author has indeed constructed a most fascinating story. His notes have been taken chiefly from original sources, and the work will undoubtedly become a classic in American medical literature. While the work deals specially with the history of medicine as related to the nose and throat, there are numerous references which make the book interesting to the general practitioner as well. It is without doubt a most important contribution to the history of rhinology and laryngology.

COURS DE DERMATOLOGIE EXOTIQUE. By E. JEANSELME, of the Faculty of Medicine, assisted by M. TREMOLIERES, interne of the hospital. Masson et Cie, editors, Paris, France. Price, 10 francs.

This book consists of a course of lectures delivered at the Institute of Colonial Medicine of Paris, by Dr. Jeanselme. The lectures are condensed and written in an entertaining and practical manner, so that the essential points of exotic dermatoses are clearly outlined. The language is clear and the French is exceedingly easy for an English-speaking person to read. The subjects of leprosy, syphilis, pian or frambœsia,

phagedenic ulcer, elephantiasis, ring-worm, Madura foot, and other maladies peculiar to tropical countries, are fully described, together with the histo-bacteriological researches to date. Such a book will be of great interest to those going to our tropical colonies, and, in fact, to all physicians who might come in contact with people who have sojourned in the tropics and returned home with some of these souvenirs. Tropical medicine has in the last few years received an incentive through the schools of Paris and Liverpool, and special books on this subject are a great addition. The volume contains five colored plates and 108 illustrations in black and white, all of which are well executed.

MANUAL OF ANTENATAL PATHOLOGY. The Embryo. By J. W. BALLANTYNE, M. D., F. R. C. P. E., F. R. S., Edin.; Lecturer in Midwifery and Gynecology, Edinburgh. Publishers: William Green & Sons, Edinburgh. 1904.

In the number of August, 1902, of this journal we have referred to the first volume of this work. We expressed on that occasion the opinion that this work cannot fail to arouse the interest of every modern physician. It seems that our prophesy has proved true. Since this classical work of Ballentyne has appeared, quotations from "Antenatal Pathology" are rather the rule in papers dealing with the various diseases of pregnancy or the new born infant. While the first volume dealt especially with the diseases of the fetus, the present one is concerned with the pathology of the embryo and, to a small extent, with the morbid tendencies of the germ. Obviously, pathology of the embryo is almost identical with teratology, and this subject practically forms the material for this volume. In accord with the original aim of the author to present the pathology of the unborn child in such a form as to point to the possible prevention or treatment of antenatal disease the subject of teratology is mainly approached from the side of causation. The immense amount of valuable information embodied in this volume can easily be inferred from a statement in the author's preface, in which he says that he intended to treat the subject of pathology of the germ on the same scale of completeness, but that he gave up the idea because it would have entailed the necessity of writing a third volume of the same size (about 700 pages.)

This second volume completes a work which, in the history of medicine, will always be recognized as the foundation of a new department of scientific medicine known as "Antenatal Pathology."

PRACTICAL PEDIATRICS. A Manual of the Medical and Surgical Diseases of Infancy and Childhood. By Dr. E. GRAETZER. Authorized translation, with numerous additions and notes, by HERMAN B. SHEFFIELD, M. D. Pages xii.-544. Crown octavo. Flexible cloth, round corners. Price, \$3.00 net. F. A. Davis Company, Publishers, Philadelphia.

The profession is to be congratulated on this addition to the list of smaller works on pediatrics. Dr. Graetzer has gathered together an enormous amount of clinical and practical data, and presented it in clear and concise form. The additions of Dr. Sheffield add very greatly to the value of the work, and his translation is a model one. The addition of a comprehensive section on *materia medica* and therapeutics is a noteworthy feature, and one that enhances the usefulness of the work as a manual of ready reference. The bookwork is excellent.

A TEXT-BOOK OF PHYSIOLOGICAL CHEMISTRY. By OLOF HAMMARSTEN, of the University of Upsala. Authorized translation from the author's enlarged and revised fifth German edition by John A. Mandel. John Wiley & Sons. 1904.

The importance of a thorough knowledge of the chemistry of the human organism is being realized more and more. A profound knowledge of the diseases to which man is

heir cannot be had without a thorough understanding of the physiological processes constantly taking place in the body. The chemistry of a cell is the life of that cell; the chemistry of a group of cells constitutes the physiological function of an organ; the functions of a group of organs constitute the life of an individual. A knowledge, therefore, of physiological chemistry is indispensable to the physician.

Hammarsten's original work in German is too well known to need praise here. Under the translation by Mandel the work seems to have suffered in no particular. The chapters on the liver, digestion, the chyle, lymph, transudates and exudates are especially good and complete in every detail.

The work is not intended as a complete hand-book, but as a short text-book. It comprises about 700 pages, containing no superfluous matter.

A TREATISE ON OBSTETRICS. For Students and Practitioners. By EDWARD P. DAVIS, A. M., M. D., Professor of Obstetrics in Jefferson Medical College; Professor of Obstetrics and Pediatrics in the Philadelphia Polyclinic, etc. New (2d) edition, thoroughly revised and much enlarged. Octavo, 800 pages, with 274 engravings and 39 full-page plates in colors and monochrome. Cloth, \$5.00, net; leather, \$6.00, net.

If we may accept as the necessary requisites of a commendable text-book for the student, systematic arrangement, clearness of expression, good definitions and illustrations, reliability of information and a few other qualities, then we must say of this treatise on obstetrics, that it is wanting in every respect. The space at our disposal does not permit of enumerating all the reasons that compel us to be so severe in our judgment concerning the volume before us, but a few shall be given.

An extremely unsatisfactory and partly incorrect description of syncytioma malignum, although a disease of the puerperal or post-puerperal state, is given under "Pathology of Pregnancy." In illustration of this peculiar new growth of the uterus, the author quotes the history of a case of his observation, in which, however, no tumor was found in the uterus. On page 233 syncytioma is taken up once more, this time in a chapter entitled "Acute Infections Complicating Pregnancy." Not only the obscure definition and description is repeated, but once more we read the history of this one case, which so poorly illustrates the typical condition and symptoms of syncytioma. On page 241 the author even describes the "diagnosis of syncytioma during pregnancy" (!). We may mention in this connection that the chapter dealing with "acute infections" considers in the order given here: Gonorrhea, syphilis, cancer, syncytioma, typhoid fever, erysipelas, etc. On page 58 the author includes in the routine examination of the urine during pregnancy, its examination for the presence or absence of bacteria, a demand which in practice hardly could be carried out.

But probably most striking are the numerous incorrect statements. To quote a few: Sounds heard in the umbilical cord are *nearly* as rapid as the fetal heart sounds (p. 41). Duovular twins are of different sex (p. 280). The author gives dimensions promiscuously in centimeters and inches, temperatures in Celsius and Fahrenheit, at times recording the equivalents in the other unit, we thus meet with the following interesting facts: On page 51 we find 26 1-2 cm. = 10 inches; in the next line 28 cm. = 11 inches, which makes one inch equal to 1 1-2 cm. On page 81, however, we find 25 cm. = 11 1-9 inches.

It would seem that the author at times does not succeed in expressing his ideas in a very distinct form; we find the following sentence: The hemoglobin of fetal blood is in excess of that in the mother, averaging, according to Bidone, and Ferrari 120 *degrees* (?), Elder and Hutchinson giving *them* (?) as 18,000 per cubic-millimeter, *ortwice* as many as in the adult.

A sentence like the following certainly does not sound well (p. 45): 'The feet *may* present and a foot presentation be present.

We assume that it is due to careless proof reading that we read on page 284 of twins, one of whom *has* acardiacus; or, on page 546, that the cervix rotates posteriorly. In this respect the carelessness is very striking (*proliferation*, *public joint* on page 52, etc., etc). We find the names of some of the best known obstetricians misspelled; Wallenbergh, instead of Wellenbergh, Van Huvel, instead of Van Huevel; De Ribe, instead of De Ribes and so on. But most surprising is the persistent misspelling of the name of our famous French contemporary, Farabeuf. There are probably twenty or

thirty very good diagrammatic illustrations borrowed from the excellent book of this author, under each of them his name is given as Farabœuf.

The illustrations of this treatise as a whole are not very good, some are extremely indistinct, the practical value of others is not apparent (*e. g.*, plates xv and xvi), important illustrations are missing, *e. g.*, of the fetal circulation. We hardly think it necessary to quote any more of the many deficiencies of this volume. They should not exist in a "second" edition. In its present form this text-book could hardly be recommended to the student. The experienced physician will find it to contain a great number of interesting facts, but a serious perusal of the volume is made practically impossible by the constant irritating effect produced by the many mistakes, a few of which have been pointed out in the preceding lines.

PROGRESSIVE MEDICINE, VOL. I. March, 1905. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in Jefferson Medical College of Philadelphia. Octavo. 298 pages, 10 engravings and a full-page plate. Per annum, in four cloth bound volumes, \$9.00; in paper binding, \$6.00, carriage paid to any address. Lea Brothers & Company, publishers, Philadelphia and New York.

This volume treats of a variety of subjects—surgery of the head and neck, the thorax, acute infectious diseases and diseases of certain of the organs of special sense—on the plan which has from its inception been the characteristic feature of the series. What these features are it is perhaps hardly necessary to specify in detail, after so long a period of satisfactory trial.

ATLAS AND EPITOME OF GENERAL PATHOLOGIC HISTOLOGY. By Dr. HERMANN DUERCK. Translation edited by LUDWIG HECTOEN. With 80 colored plates and 36 text figures. Saunders' Medical Hand Atlases. Philadelphia, 1904.

The work of Duerck is conceived after the plan of the other volumes of analogous intent published by him and translated one or two years ago in the same series. What has been said of them holds good for the new book: that in its arrangement and outfit it cannot be excelled. The remarks made before about the necessity for these books shall not be repeated. It appears that they detract too much from the acquisition of knowledge by original study and work. As a reference, and for comparison, they are invaluable. The translation is remarkably exact and good, and the author has left intact the spirit of the original by inclosing notes and additions of his own in brackets—a usage that ought to be followed generally.

CLINICAL EXAMINATION OF THE URINE AND URINARY DIAGNOSIS. A Clinical Guide for the Use of Practitioners and Students of Medicine and Surgery. By J. BERGEN OGDEN. New York. Second edition, thoroughly revised. W. B. Saunders & Co., Philadelphia, New York and London.

In the few years of its existence this volume has come to be recognized as a standard work on this subject. It combines the theoretical with the practical, and takes up in detail the subject of urinary diagnosis, and the application of information furnished by careful chemie and microscopic examination of the urine. In this respect it differs from most works on the subject, since they are devoted almost exclusively to urinary chemistry.

Part I. is devoted to chemie and microscopic methods; while Part II. deals with the diagnosis and differential diagnosis of disturbances and diseases of the kidneys and urinary passages, whether local or general, medical or surgical.

INTERSTATE MEDICAL JOURNAL.

VOL. XII.

MAY, 1905.

No. 5

ORIGINAL ARTICLES.

A PECULIAR ALVEOLAR MELANOMA OF THE CHOROID WITH METASTASES.

By R. L. THOMPSON, M. D.

FROM THE PATHOLOGICAL LABORATORY OF THE MEDICAL DEPARTMENT OF ST. LOUIS UNIVERSITY.

Primary malignant new growths of the choroid are, as is well known, practically always some form of sarcoma. These sarcomata can in this situation be further limited to two classes: (*a*) Sarcomata which produce an intercellular substance, as spindle cell sarcoma, chondro sarcoma and osteosarcoma. (*b*) Sarcoma which have an alveolar structure, as the melanoma, or, as this growth is otherwise termed, the chromatophoroma or melanotic sarcoma.

From the nature of the growth in the eye, it has been suggested that the spindle cell sarcoma takes its origin from the outer layers of the choroid, while the melanoma (the pigment growth) comes from the more deeply pigmented inner layers. Spindle cell sarcoma can arise from any situation where there is connective tissue, while a melanoma, according to Ribbert, can only arise from skin or mucous membrane developed from skin, from displaced skin or from the eye. In other words, melanomata arise from the chromatophores.

It is manifestly wrong, therefore, to speak of a pigmented spindle cell sarcoma, though so-called pigmented spindle cell sarcoma have been described, especially in the eye, and in this instance we have pigment in a spindle cell structure; for the spindle cell sarcoma comes in the class of sarcoma whose cells produce an intercellular substance, but do not produce pigment.

The interest in the case here reported attaches itself to the fact that until a very complete histological examination was made it was thought that there might be in the eye two anlagen, each giving rise to a new growth, the one a spindle cell sarcoma, the other a melanoma. It is on the differentiation of these two forms of sarcoma and the deviation from type that this article is based.

The case also assumes clinical interest from the slow development of this malignant growth. Five years elapsed from the removal of the eye to the death of the patient. The clinical history of the case is as follows:

• David Dane, a peddler, forty years old, born in Sweden, entered the Boston City Hospital September 16, 1903, suffering from pain in the thighs and complaining of a lump in the left abdomen. Five years previously (August 22, 1898,) he had been admitted to the Massachusetts Charitable Eye and Ear Infirmary. He then had not seen with the left eye for four years, during which time he was troubled on and off with pain. Examination showed the left eye sunken and sightless. Globe tender and painful. Enucleation was done without incident, and

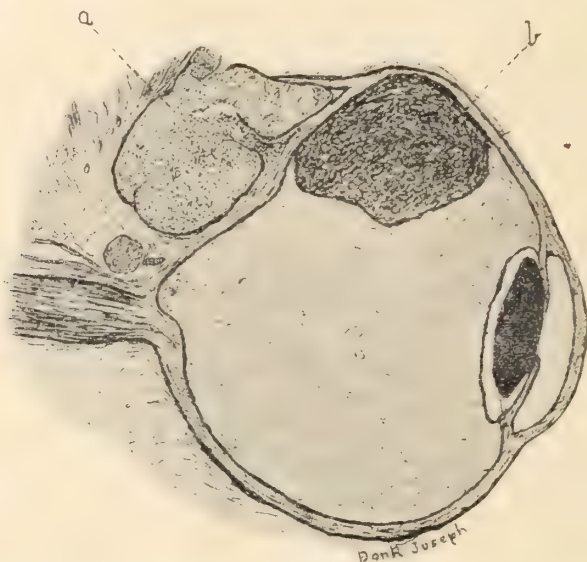


FIG. 1.—Section through enucleated eye showing original growth. A, spindle cell mass. B, pigmented mass.

a fleshy mass, extending from the optic nerve to the insertion of external rectus, was removed. Wound healed and patient was discharged.

On admission to the Boston City Hospital (five years after this operation) the patient showed visible swelling of left hypochondrium, and on palpation a hard tumor, the size of the palm of the hand could be felt, apparently attached to the left lobe of the liver. There was also bulging of lower third of left chest. The right leg was held flexed on pelvis, but could be extended. The patient complained of constant and severe pain in the right thigh, shooting to ankle. He took nourishment poorly, and rapidly failed; developed paraphlegia with constipation, bed sores and bladder symptoms, and died December 1st.

The autopsy was performed by myself five and one-half hours after death. The following is the protocol (in abstract):

Body of an emaciated, slender man. No œdema. Left eye missing.
Peritoneal Cavity.—Mesenteric lymph nodes small, but firm, and gray-

ish white on section. The transverse colon is bound to the under surface of the liver by fairly firm adhesions. On removing the intestines two large tumor masses are seen on either side of the lumbar vertebræ, infiltrating the psoas muscles. The largest mass is on the right side, measuring 16x11x5 cm. Cut surface is mottled gray and brown-black, and fairly firm. Several small cysts are seen in the upper part, one-half cm. in diameter, filled with yellowish viscid fluid. On the left side the tumor mass is 10x5x3 cm. The outside of the mass is covered by normal-looking muscle. On section the tissue is soft and infiltrated with a grayish, viscid, in places puriform, material.

The lumbar vertebræ that are covered by these tumor masses are eroded, especially on the right side, and are mottled dirty gray and black.

Pleural Cavities.—Loose columnar and solid adhesions over both backs, obliterative below. Over 400 c. c. of clear fluid (sp. gr. 1012) in anterior part of right cavity,

Pericardial Cavity.—Over 50 c. c. clear fluid. Normal.

Heart.—Myocardium, endocardium and valves normal.

Chambers contain cruor clots. *Coronaries.* normal.

Lungs.—Retracted, dry, with considerable carbon deposit. In central portion of each lower lobe is a walnut-sized, firm, well-defined nodule of fleshy consistence and a homogeneous pinkish-gray color. In one nodule is a well-defined area of necrosis, dry, friable, in places calcareous. There is no evidence of tuberculosis at apices. Bronchial lymph nodes normal.

Spleen.—Weight 300 gms. On section dark red. Small amount of spleen substance adheres to knife on scraping. Trabeculæ, vessels, and Malpighian bodies evident.

Gastrointestinal Tract and Pancreas.—Normal.

Liver.—Weight 3250 gms.—There is a general increase in size, which is more marked in the left lobe which is two-thirds the size of the right. On the upper surface of the left lobe are two large nodules each 8x7 cm. in diameter. There are also several small nodules and the under surface is covered by these large nodular masses. In the right lobe the process is practically the same although there are fewer large nodules and more small nodules. On section these areas vary from dirty grayish white in color throughout, to areas which are mottled grayish white and black, looking not unlike ripe Roquefort cheese.

Kidneys.—Weight 365 gms. Cortex 7 mm. Capsule strips readily. Right kidney dark red in color. Markings distinct. Left kidney somewhat more firm than right. On section shows throughout irregularly scattered, dirty gray, opaque areas, but not definitely marked off from the kidney substance.

Adrenals.—Normal.

Bladder.—Mucosa is somewhat reddened and covered with considerable mucus.

Prostate.—Appears normal.

Testicles.—Thread rapidly.

Brain.—Weight, 1270 gms. Normal save for a fairly well marked oedema.

ANATOMICAL DIAGNOSIS.

Melanotic sarcoma of lungs, liver, mesenteric lymph nodes, psoas muscles and lumbar vertebræ.

Pyelonephritis. Acute prostatitis.

Chronic adhesive pleuritis.

Hydrothorax (right).

Oedema of brain.

Eye.—The enucleated eye which was obtained at the Massachusetts Charitable Eye and Ear Infirmary, through the kindness of Dr. F. H. Verhoeff, presents on section two apparently distinct tumor masses. The first is at the equator and within the chamber. It is encircled by connective tissue in which is considerable pigment. It is black in color, irregularly oval and measures 12x7 mm. The second mass is just posterior to the first, a part of it is separated from the first mass only by the sclera which is apparently behind. It extends nearly to the entrance of the optic nerve. This mass is gray in color, similar in contour to the first, and measures 12x8 mm.

Histology.—With the exception of the enucleated eye which had been preserved in formaldehyde, tissue was preserved in Zenker's fluid, and paraffine sections stained with eosin methylene blue and Mallory's fibroglia, connective tissue, and phosphotungstic acid-hæmatoxylin stains. The latter stain was used especially for the demonstration of intercellular substances. For the purpose of finding the best areas, pieces from various regions were explored by means of frozen sections stained with hæmatoxylin-eosin.

Histology Eye.—The first mass described consists entirely of pigment and necrotic cell masses. No definite cell picture can be made out but some connective tissue and remnants of blood vessels are seen. The pigment, both in large masses and fine granules, is everywhere present.

The mass outside the sclera is well preserved and shows a connective tissue stroma in which are masses of spindle cells. Some of the cells are in mitosis. The greater part of the connective tissue is at the periphery of the nodule. It comes apparently from the sclera and forms an alveolar network in which the cell masses lie. At the periphery, the cells are few in number but at the center of the tumor typical spindle cell masses are seen. Here the connective tissue is small in amount, but it appears to be a continuation of the fibrils from the sclera and not an intercellular substance formed by the cells.

The posterior chamber of the eye, outside the definite tumor previously

described, shows remnants of blood vessels and connective tissue together with necrotic cell masses that have the appearance of having been spindle cells.

Left Psoas.—Section from the tumor on the left side of the lumbar region of the spinal column show an apparently typical spindle cell sarcoma. Much of the tumor mass is necrotic. The remainder consists of small spindle-shaped cells, closely packed, having elongated oval nuclei. There is no intercellular substance; the cell bundles are small, so that several groups of cells running in different directions may be seen



FIG. 2.—Typical alveolar melanoma from a metastasis in liver. $\times 70$.

in the same section. The nuclei show occasional but not numerous mitotic figures. The cell masses have a definite alveolar arrangement, separated by a thin connective tissue stroma, in which are blood vessels of varying size. In cross-section the vessels, which are comparatively numerous, show an alveolar arrangement of the cells about the vessel rather than a grouping of cells, with blood vessels between the cell groups.

Right Psoas.—The section from the tumor on the right side of the lumbar vertebrae presents an entirely different picture from the foregoing. In general the cells have an alveolar arrangement. They are round, oval

or irregular, with round or irregular vesicular nuclei, the chromatin being massed in the center and are richly supplied with blood vessels. Generally they are distinctly grouped about a vessel in alveolar arrangement. Many of the cells contain a considerable amount of yellowish-green pigment. There are large, pale pigment-bearing cells about twice the size of the ordinary tumor cells and also small pigment-bearing cells about half or quarter the size of the average tumor cells. Pigment appears in these cells, both as dense round masses in the cytoplasm, similar in morphology to the hyaline droplets that occur elsewhere, and as



FIG. 3.—Spindle cell type of growth, also from liver. $\times 70$.

lighter granular material diffusely filling the entire cell. Certain areas in the section are practically free from pigment. The cells are loosely packed. In general there is very little connective tissue between the cells, but certain areas show broad bands of connective tissue, in which the cells lie snugly or in the small masses or encircle a larger, stroma free, cell mass.

Liver.—The larger tumor masses are of the spindle cell type, the same as described under left psoas. In addition to the spindle cell tumor, however, one section shows a small nodule 2 mm. in diameter, consisting of masses of the alveolar melano-sarcoma cells as described under

right psoas. This area is definitely circumscribed, is directly under the capsule of the liver, and is in no way connected with the spindle cell growth. Apart from this, and not definitely defined from the surrounding liver parenchyma, is a similar still smaller area. The columns of liver cells surrounding are congested.

Lung.—Save for certain areas which will be described later on, the nodules from the lung show the spindle cell type of growth.

Lumbar Vertebra.—Sections from right side show alveolar melanosarcoma with considerable inflammatory process.

Mesenteric Lymph Node.—The cells here with low power have some-



FIG. 4.—Both types of growth intermingled, from field adjacent to figure 3. $\times 70$.

what the appearance of being arranged in rouleaux or are grouped about blood vessels in a perithelial arrangement. Only a very little pigment appears in this section.

Discussion.—Independent sections from various situations would convince one that there were two separate and distinct forms of malignant new growth present in the case. First, a typical spindle cell sarcoma of eye, left psoas, lung and liver; and, second, a typical melanotic sarcoma of eye, right psoas, liver, lumbar and vertebrae.

A more careful consideration of specially selected sections, however,

show many interesting facts and leads to the conclusion that only one tumor, pleomorphic in character, is present.

In the original spindle cell type of growth from the enucleated eye considerable pigment is seen within and outside the sclera and in close relation with the spindle cell growth. The pigment is derived, evidently from the broken-down cells of the choroid. The cells passing through the sclera by means of the blood vessels.

One section from the left psoas, which everywhere shows the *spindle cell* type of growth, is loaded with pigment. The pigment appears as brown granular masses in and outside cells. It is most abundant at the periphery of the tumor, but can be seen everywhere throughout the section. It is evident then that the type of cells outside the sclera have in some instances taken pigment with them in their metastases; though these cells outside the sclera are spindle shaped rather than round or oval.

The alveolar arrangement is characteristic throughout the metastases, and taken in connection with the fact that these cells produce no intercellular substance, shows the close histological relationship to the class of tumors described as alveolar melanoma. The characteristics of the alveolar melanoma are to grow in alveolar arrangement (somewhat similar to that of a carcinoma); to produce pigment, and not to produce intercellular substances. With these facts for a starting point, further evidence is sought to prove that both tumors are the same and belong to the alveolar melano sarcoma group rather than to the spindle cell group. This evidence is found in specially selected sections from the lung and right and left psoas. These sections show a mingling of the two types of tumor previously described. In these sections the spindle cell type of sarcoma predominates, but small circumscribed and larger diffuse areas are seen where the cells assume the round or oval type, with many pigment-bearing phagocytes. These cells, as in the uncomplicated melanoma, are more loosely packed than the spindle cells and richer in blood supply. These cell masses appear often in small nodules, usurping the spindle cell growth much in the same manner as the small area previously described appears in the liver parenchyma. The particular features common to both types of growth is the alveolar arrangement of cells about the blood vessels, and the lack of production of an intercellular substance.

Summary.—We have originally a tumor of the eye, coming from the choroid, which appears in two forms, a definite pigment-bearing mass (in which, unfortunately, the cells cannot be studied, owing to the necrosis) and a spindle cell mass which practically does not show pigment. Five years later autopsy shows in various regions metastases of both types of tumors. Sections of these metastases taken independently might readily be diagnosed as alveolar melanoma and spindle cell sarcoma respectively. We find, however, certain sections which show both

types of tumor curiously intermingled. To solve the problem, then, as to whether two separate and distinct tumors, each with its own metastases, or whether only one tumor is present, we must consider the characteristics peculiar to each form of growth.

Though we have in certain instances features peculiar to the spindle cell sarcoma, such as the shape of the cells, the compactness of the structure and the relatively smaller number of blood vessels, nevertheless the absence of the production of an intercellular substance, the tendency to grow in alveolar arrangement, the presence of pigment, and the relation of the cells to the blood vessels, compel us to class the tumor as an alveolar melanoma.

I have been unable to find in the literature any description of a similar growth. Although as previously mentioned, tumors composed of spindle shaped cells bearing pigment have been described, but never in the combination seen in this instance.

Why this modification of cell structure should take place might tempt discussion. Assuming that a sarcoma derived from the outer layer of the choroid is of the spindle cell type, is the passing of pigment derived from the chromatophores through the sclera (the character of the original pigment-bearing cell being destroyed) sufficient to stimulate a proliferation of cells in this locality in a manner common to new growth arising in this situation? This would lead to the conclusion that a substance (a cell product let us say) and not a cell, could be the starting point of a new growth. We have many points to uphold this theory. Malignant growths do not arise from a modification of the cells of a part; *i. e.*, we do not now believe in the sarcomatous or a carcinomatous degeneration. Tumor cells are always tumor cells no matter how early in its course we approach the growth. On the other hand, may we not have had two anlagen from each of which a separate growth arose? One outside the sclera, a spindle cell sarcoma, arising from ordinary connective tissue. The other within the globe a melanoma, arising from the chromatophours. And might not the former simply have been modified by the passing into it of the chromatophores, so that it took on many of the characteristics of a melanoma, retaining meanwhile the characteristic shape of its cells with all the variations shown in the metastases?

In conclusion, I wish to express my indebtedness to Dr. F. B. Mallory, whose valuable classification of sarcoma I have attempted to follow.

FUNCTIONAL DIAGNOSIS OF KIDNEY DISEASES.*

By WM. M. ROBERTSON, M. D., of St. Louis.

It is not the object of this paper to add anything new to the literature which has already been published on this subject, nor have I a series of cases to report in support of the contentions of those who favor or oppose the value of this method of diagnosis. My object is to present in as brief a manner as possible the practical workings of the method as I have recently had opportunity of seeing it carried out on numerous cases in the clinic of Professor Casper, the greatest and most enthusiastic advocate of Functional Diagnosis of Kidney Diseases. When this subject was first brought to the attention of the profession, only a few years ago, like most medical or surgical discoveries its advocates were over enthusiastic and made for it extravagant claims which could not stand the test of time: the pendulum had swung too far in one direction. The theory was attacked by various men, especially Israel, who was disposed to reject it *in toto*. The reaction came and the pendulum swung back too much. After continuing their observations over a longer period of time, each side found that some statements had to be modified and others retracted, till now, while the subject is still new and there is much to be settled by the studies of careful and earnest workers, I believe that functional diagnosis has earned for itself a lasting position, and that it is of the greatest assistance to the kidney surgeon. I do not contend that it in any way replaces the older methods of examination and diagnosis, but the mortality following kidney operations has been so great, and that, too, at the hands of famous operators, that I think we should make use of every diagnostic means at our command before an operation on the kidney is undertaken. The kidneys are organs necessary to life and the removal of one must result fatally if the other is absent, or, if present, is too much impaired by disease to carry on the work required of it.

The difficulty of determining the sufficiency or insufficiency of the kidney action from the character of the urine caused Koranyi, some ten years ago, to turn his attention from solids eliminated in the urine to those which were retained in the blood, and he gave to the profession cryoscopy of the blood for the diagnosis of kidney sufficiency. This method is based on the following principles: That the freezing point of a solution is dependent on the number of molecules held in solution, and the greater the number of molecules the lower will the freezing point be below that of distilled water; that in cases of normal kidney activity the freezing point of the blood remains constant between 0.56 and 0.57 below the freezing point of distilled water and that retention in the system of the products of metabolism as a result of insufficient

* Read before St. Louis Surgical Club April 12, 1905.

kidney action is manifested by a lowering of the freezing point of the blood. Thus did Koranyi attempt to express with mathematical precision the degree of kidney sufficiency, and as experience confirmed the truthfulness of his claims in the vast majority of cases it seemed that a great advance had been made in kidney diagnosis. But further experience with this method, soon demonstrated the fact that in those cases where it is most needed it is found wanting; that the freezing point of the blood can be influenced by other factors than kidney activity. Thus do we find in spite of complete kidney sufficiency an abnormal lowering of the freezing point of the blood in malignant tumors of the kidney, in



Beckmann's Apparatus.

one-sided pyonephrosis, in many abdominal tumors, in malarial attacks and attacks of acute gout. On the other hand, in cases of anemia, where the molecular concentration of the blood is diminished, the freezing point is abnormally high and approaches that of distilled water, so that, in these cases when a kidney insufficiency is present, the two factors working against each other, renal insufficiency on the one side and anemia on the other, can so neutralize each other that a normal freezing point of the blood is obtained. As most kidney diseases lead to a condition of anemia, which influences the freezing point in an opposite direction to that of insufficient kidney action, we are not in a position in these

cases to give any definite opinion as to the functioning power of the kidneys. These sources of error limit the practical application of cryoscopy of the blood within such narrow bounds as to make it at present of little value in kidney surgery.

The simplest and most practical apparatus for clinical purposes for determining the freezing point of blood and urine is the Beckmann apparatus (see Fig. —). It consists of an inner tube (A), which is placed in a larger tube (B), the space between the two serving as an air chamber. The two tubes are then placed in a larger vessel (C). This larger vessel (C) contains the freezing mixture consisting of ice and salt. In it are also a thermometer (T) for determining the temperature of the freezing mixture and a bent wire (F) which serves as a mixer. The inner tube (A) contains a mixer (E) made of bent platinum wire and a Beckmann thermometer (D), which is divided into hundredths of degrees.

The cryoscopic examination is then made as follows: The larger vessel is filled with the freezing mixture, the temperature of which should be from 7 to 10 below zero centigrade. Then in the tube (A) is placed enough distilled water to cover the mercury in the bulb of the thermometer and it is allowed to stay in the freezing mixture until its temperature approaches zero. The tube is then taken out and carefully dried and placed in the larger tube (B), and is thus prevented from coming in direct contact with the freezing mixture. Then constantly stirring with the mixer (E) and watching the thermometer, the mercury is at first seen to sink under the freezing point and then at the moment of freezing, in consequence of the warmth set free, rises again and remains fixed. This point is the freezing point of distilled water, and should be determined before every examination. By the same method we determine the freezing point of the fluid to be examined, and the difference between the two gives us the lowering of the freezing point sought for.

In determining the freezing point of urine, it is necessary that the urine should be fresh and that it should not be filtered, heated or mixed with chemicals, as its molecular concentration will be altered. The tube in which the urine is frozen must be clean and dry. Koranyi placed the freezing point of normal urine between 1.3 C. and 2.3 C. under that of distilled water, while other authorities placed it as high as 0.9 C. As the freezing point is dependent on the molecular concentration, it is evident that it is liable to great variations, and a patient whose urine to-day shows a freezing point of say 1.3 C. may tomorrow, after a drinking bout, show a freezing point of 0.6 C., both of which are strictly normal. It is on account of these wide variations that the freezing point of mixed urine is of no value to us, and it is only when we can compare the freezing point of the urine from one kidney with that of the other that it gives us valuable information regarding the work of each kidney. As has been frequently stated the freezing point is determined by the molecular concentration: the molecular concentration represents the solids

in the urine, and if the urine be collected separately from each kidney and the one urine has a freezing point of say 0.6 °C. and the other of 1.3 °C., we are forced to the conclusion that the power of the first kidney for eliminating solids is greatly diminished. This method, of course, gives us no idea as to the character of the solids, nor does it give us any idea of the nature of the disease. It only gives us a comparison of the power of each kidney for doing work. As a point of practical importance I will say that in order to accentuate as much as possible the difference between the freezing points of the two urines, it is better to work with concentrated urine, and it is well to instruct the patient to partake sparingly of liquids for twenty-four hours before the urine is collected.

In the clinic of Professor Casper this method goes hand in hand with, and is always employed in connection with the injection of phloridzin. As it is my object to deal with facts, or what I believe to be facts, and not with theories, it is not my intention to discuss, or even mention, the various foreign substances which have been artificially introduced into the system and by studying the relations which govern their elimination try to form an opinion of kidney activity. The principle is an old one and is based on the fact that some substances are eliminated by the kidneys with more difficulty when these organs are diseased than in healthy individuals. The only one of these substances which I propose to discuss is phloridzin, a glucoside discovered by von Merring many years ago, which is capable of producing the elimination of sugar. Klemperer found that this phloridzin glycosuria was diminished or absent in patients suffering from kidney disease, and von Zuntz discovered that phloridzin exerted a specific irritation upon the renal cells which enabled the kidneys to draw the previously formed sugar from the blood, thus causing a diminution of the sugar in the blood. Based upon these facts, Casper and Richter introduced the percentage of sugar contained in the urine from each kidney after the injection of phloridzin as a measure of the kidney work, and as a result of their investigations announced that the quantity of eliminated sugar is dependent upon the amount of functionating kidney parenchyma present and that the two stand in a direct ratio to one another; and that as the working power of the kidney is dependent upon the amount of functionating parenchyma present, we can measure the amount of kidney work by the amount of sugar eliminated.

As in the case of cryoscopy, this method is of service to us only when we compare the urine from each kidney, for no conclusion can be drawn from the absolute amount of glycosuria, as it is impossible to assign a normal value to the amount of sugar produced and eliminated by normal kidneys in a definite length of time by a definite amount of phloridzin. Normal kidneys excrete from phloridzin the same amount of sugar at the same time, and as this is a measure of the amount of working par

enchyma present. it is evident that if after injecting phloridzin the urine from one kidney shows sugar to be entirely absent or present in a small amount. while the urine from the other kidney shows as great a percentage of sugar as would be expected under normal circumstances. we are justified in concluding that the working power of the first kidney is. to say the least, much diminished.

Phloridzin in the doses in which it is employed (0.01) seems to be harmless. Professor Casper says that in his vast experience with it he has never seen a single unfavorable symptom which could be attributed to its use. The glycosuria following the injection of phloridzin begins quickly and ends quickly. The sugar can be detected in the urine from fifteen to thirty minutes after the injection, and the phenomena is completed in about three hours. It is not a matter of great importance at what period of the process the urine is examined, whether at the beginning or toward the end. though at the beginning. say thirty minutes to an hour after injection. the sugar elimination is at its acme, and the difference between the normal and diseased kidneys is naturally much greater than it would be at the close of the effect of the phloridzin. when we are dealing with minimal amounts of sugar, and its quantitative estimation is more difficult. As already stated this method is to be employed in conjunction with cryosecopy. and the fundamental principles upon which the two rest may be briefly summarized as follows: That in healthy kidneys the urine collected from each kidney at the same time contains approximately the same number of molecules, that the freezing point of the urine from each kidney is the same. that after phloridzin injection the urine from each kidney collected at the same time contains approximately the same amount of sugar, that the more parenchyma there is destroyed or disturbed in its function the fewer molecules are eliminated by the kidneys, that therefore the freezing point of the urine from this side is not so low as that of the sound kidney, and that likewise the sugar elimination in a kidney whose parenchyma is diseased or destroyed is diminished or entirely absent. dependent upon the extent of the affection.

Naturally, functional diagnosis gives us no information as to the nature of the disease. If we get from a kidney urine whose freezing point is much higher (nearer 0) than that from the opposite side. and in which sugar is either absent or relatively small in comparison with that of the other side, we will know that this kidney's action is small, and that the work is being carried on by the other kidney. but we must determine the nature of the disease by the history, careful clinical observation. palpation, chemical and microscopical examination of the urine, etc.

While the object of this paper is to give a brief outline of the principles of functional diagnosis and not to report cases. there has recently come under my observation a case which, to my mind, seems to especially emphasize the assistance we may derive from this method, not only

as to determining the functioning power of the one kidney, but the existence and extent of the disease in the other. The case was that of Mr. S., who was operated upon in December, 1904, for a supposed appendicitis. An abscess was opened and the patient recovered with a urinary fistula in the line of incision. He was of the opinion that in some way the ureter had been injured, and on March 1st he came to Dr. Tuholske for operation, expressing the wish that if possible the kidney be saved. I was asked to determine the functioning power of the two kidneys. The cystoscope showed the bladder to be normal; the right ureter was catheterized, the catheter passing for a distance of six inches but no urine was obtained from this side, hence it was assumed that the urine collected from the fistula in the abdomen represented the work done by the right kidney and the urine in the bladder the left kidney. The result of the examination was as follows:

Urine collected from bladder, average amount in twenty-four hours, eighteen ounces.

Urine collected from fistula in abdomen, average amount in twenty-four hours, twenty ounces.

Hypodermic Injection of Phloridzin 0.01.

Δ.....—1.91
Sa..... 2.0

Δ.....—0.55
Sa..... 0.25

Hypodermic Injection of Methylene Blue 0.05.

Reaction in urine pronounced in twenty minutes and continued for two and one-half days.

Slight reaction first appeared after eleven hours and continued for about three hours.

A diagnosis of practically total destruction of kidney parenchyma on the right side was made, and this was confirmed by the operation, which was recently performed by Dr. Tuholske. The kidney consisted of merely a sac extending from the normal position of the kidney to the sinus in the iliac region with almost total absence of kidney structure. The patient is making an uninterrupted recovery.

In conclusion, I wish to say that I believe:

1. That functional diagnosis presupposes the ability to collect the urine from each kidney separately.
2. That in the present state of our knowledge the determination of the freezing point of the blood for the diagnosis of kidney sufficiency is of no value.
3. That the determination of the freezing point of the mixed urine, and the percentage of sugar in the mixed urine after the injection of phloridzin, on account of the wide variations to which they are subject, give us no idea as to the sufficient action of the kidneys.

4. That the determination of the freezing point of the urine from each kidney, and the percentage of sugar in the urine from each kidney after the injection of phloridzin, give us most valuable information as to the existence of disease on the one side and kidney sufficiency on the other.

5. That functional diagnosis in no way supplants or does away with the older methods of kidney diagnosis, that it is a supplement to them and that while its employment requires much time and careful attention to detail, if it is carefully carried out it will add much to the surgeon's peace of mind and the patient's welfare.

THE RELATION OF THE DEFECTIVE TO THE COMMUNITY.*

BY HAL C. WYMAN, M. D.

PROFESSOR OF SURGERY MICHIGAN COLLEGE OF MEDICINE AND SURGERY, DETROIT.

A defective person is one who has not developed the strength of mind of the average child, does not come up to the common plane of intelligence. We may restrict the use of the term in the sense of the definition that I have just used, comparing the defective who is deficient in quality of mind with one who is defective through loss of some of the special senses. Michigan gives a great deal of attention to the care of the blind and to the education of the deaf. These are defective persons, but it is not my purpose to refer to them, but to limit what I have to say to the other type, those who are short of intelligence, in want of understanding in the common plane of knowledge and comprehension. We have this mind of ours probably because of the relation which exists between certain cells in the brain and the blood. We get the blood largely through a system of organs that we call digestive organs, through the air that we inhale, through respiration. The action of blood upon the cells of the brain gives us as a product thought, but thought does not grow by virtue of blood alone. Something that we call environment must make impression upon the individual who would think. While blood is enriched and maintained by food and air, mind, as a quality, an attribute of the brain, seems to need something that grows out of the relations in life of one individual to another, and anything which interferes seriously with nutrition, with the quality of the blood, or with the structure of the brain cells, or with the character of environment, gives us as a product a mind that is not quite up to the average, so that when we look at the defective in his relation to the community we must take a comprehensive view, because this person is really a part of us and a part of the whole community. If we had a classification a little better than any that we have now it would simplify the study of the defective very much. We all know some persons who

*Address delivered before Michigan State Conference of Charities and Corrections at Bay City, January 6, 1905.

are singularly wanting in what we call the common standard of intelligence. We know fools of varying degrees; we recognize idiots and feeble minded persons, and we use these terms to indicate the different types of intelligence short of the normal, and yet we do not succeed, at least have not as yet, in arriving at a reasonable, definite standard of comparison which will enable us always to put the defective person in just exactly the class where he belongs. There is no trouble at all in making out a classification by the speech. The normal individual readily understands speech, readily uses it, and, falling away from speech as he uses it, we may descend in the grades until we reach persons who are absolutely incapable in that regard, who cannot utter any language and who have no comprehension of speech; and you might say that the feeble minded can be divided into two classes, those who can communicate with the world by speech and those who cannot. But that would not cover the ground, that would not help us very materially. Those who are so degraded in this regard, who come so near having absolutely no mind, to a condition of *amentia*, as it is called, are not the type of defective persons which give the community the most trouble. We always know what those persons are likely to do—it is not very much. But, rising in the scale as we approach the higher class of defectives, we reach, finally, a class in which the moral faculties mainly are affected, a class from which comes our criminal population largely, and a class that we need to study with a great deal more care than we have heretofore. I hardly think that it is necessary for me to say that if a little pains is taken to look over a criminal population, as it appears in the courts in this city, you will find that a large percentage of those individuals are moral imbeciles, and it is not necessary for me to say that we shirk responsibility when we fail to realize what our duty to those persons is. I do not want to branch off here and speak of the indeterminate sentence, in its application to this class of persons, further than to say that it is one of the devices which modern science has given us to bring together in a position or place where we can permanently care for them, a very large proportion of the defectives known as the moral imbeciles. These individuals will be sentenced, not to be released after a few weeks or months to again resume their criminal operations, and to still further endanger our social relations by taking a place in the social organization that is commonly taken by a sound individual. There are probably one hundred and fifty thousand defectives in the United States. About eight thousand of them are cared for in institutions. The remainder go about in the community, they appear in the courts I have indicated or they are cared for in the homes of their parents, and it is well to note the relation which the defective in the home bears to the family. Who has not witnessed a mother with a house full of children, perhaps one of whom was a helpless defective, give all her time, intelligence and strength to

the care of that one, letting the remainder of the family shift for themselves, oftentimes getting into misfortune growing out of the fact that the mother, the director and managing influence in the average American home, has all of her time taken up by this one defective child. It appears to me that if the state is to perform its whole duty in this regard it ought to so arrange its institutions, so refine them, that it could step into the home and say to the mother, "I will take your helpless child and care for it that you may give your time to the sound children, that need your attention." Sometimes the mother does not notice, she is not expected to see the slighter grades of imbecility which culminate in later years in moral imbecility distinctly marked. There is, however, a power and force capable of meeting even this suggestion, and that is represented by the teachers of our schools, with sometimes, perhaps, a little help. The teachers may come next to the parents in comprehension of the capabilities of a child, and discriminate as regards the mentality of the pupils. In the larger cities, schools for the backward children already exist. It is said that there is no city of twenty-five thousand people but what needs a special school or department of its public school system for the special and particular training of defective children. Those who are backward and behind cannot keep up with the ordinary school children. Some little question, perhaps, might come up as to the wisdom of segregating these children in the schools. At first glance it would appear that the backward child would improve by its relation with the more forward children, but I think the consensus of opinion of the teachers who have studied this matter is that backward children do much better under conditions of segregation. In a city like this one, I think with some forty thousand population, if I remember rightly, there might be room for a considerable class of these defectives, who are now in the schools mingling, perhaps, with other pupils, and not having opportunity for special advantages which come from association with teachers especially trained for that type of work.

A great many of these unfortunate people owe their misfortune to the accidents of birth, injuries in infancy. Many of the ills of early childhood are really infections of the brain cells. One great source of this one hundred and fifty thousand defective people is this very thing, and I want to indulge myself one minute and say that surgery offers a great deal of hope for that particular type of case, and I think I can make myself more clear when I say I think the heads of these little ones with nervous diseases ought to be opened much more frequently than they are. We are too reluctant to operate. We neglect to realize to the full value the effect of the damage of blood clots in the after development of the child. Another cause, aside from these inflammations and injuries, is heredity. One is exceedingly fortunate if he can point to an ancestry free from defects of this kind. Heredity is one of the strongest factors

in this matter. Surgery offers very little hope, but has not been neglected even in this direction. Some of the early myths connected with this matter of feeble-mindedness or defectiveness are interesting. We read about individuals who have grown up with wild animals. The story of Romulus and Remus doubtless had its origin in some stray waif of humanity who in the early days was put out into the forest in the hope that he might be destroyed by the elements or wild beasts, and yet happened to have enough energy to meet his natural enemies and earn for himself existence, and grew up with some of the attributes of the brutes among which he lived, and thus gave origin to some of those strange tales. We may say that these defectives are as old as history of the human family. In the middle ages defectives wielded no small influence. They were looked upon, and they are today in most of the latin countries, as children of God. They were the attaches of courts, and history is full of the wise sayings of the fool, sometimes of the jester. I speak of this to show some of the complexities existing in the relationship of the defective to the community, and call the attention to the fact that the problem is not a new one, and my purpose is to try to show you something that Michigan, in its golden age of philanthropy, is trying to do for these people. Our poorhouses, our jails, our schools, our homes, contain numerous examples; we do not need to go far to find them; yet no state in the union is making more deliberate, careful, painstaking efforts to control the relation of the defectives to the community than is Michigan. The institution down at Lapeer cares for a large number of them, and has now under way plans that will increase its population to a degree that will take care of nearly all in the state.

ACUTE PROSTATITIS.

BY G. FRANK LYDSTON, M. D., Chicago, Illinois.

Acute prostatitis presents itself in several forms, according to the method of causation and the structures in which the inflammation is mainly localized. With no disposition to dogmatism in classification, I incline to the view that the following forms of acute prostatitis are capable of a clinical differentiation that is of vital importance in their study and management:

1. Follicular—*i. e.* parenchymatous—prostatitis, having its point of departure in posterior urethritis, due either to extension or transference of infection to the deep urethra.

2. Diffuse prostatitis, usually resulting from extension of the acute follicular form. It may occur as a primary condition. The presence and degree of interstitial inflammation in the diffuse form depends upon the method of causation, *i. e.*, whether it is due to traumatism,

extension or lymphatic infection. Diffuse prostatitis may be associated with localized or disseminated pyogenic infection.

3. Prostatitis with circumscribed suppuration—*i. e.*, acute suppurative prostatitis—due to extension of urethral inflammation, infection from local absorption or infection via the blood.

4. Prostatitis with disseminated foci of suppuration, *i. e.*, miliary abscesses.

In all forms of suppurative prostatitis more or less diffuse interstitial inflammation is invariably present.

5. Paraprostatitis. This is usually, but not necessarily, followed by abscess, and is associated with one or the other of the foregoing forms.

The basis for classification 1 is due to my belief that the most important ultimate anatomic element of the prostate is the secreting glandular tissue. According to this view, the glands, ducts and follicles of the organ constitute the true parenchyma. The acute follicular or parenchymatous form of the disease embraces most of the cases of so-called acute posterior urethritis, and varies in severity from an involvement of the follicles alone to that of all the secreting structure of the organ. The acute inflammation of the prostatic urethra in these cases is relatively unimportant in the pathologic *ensemble*, save as the point of departure of the prostatic inflammation. Most of these cases should be classified as acute follicular or parenchymatous prostatitis. In practically all cases of so-called acute posterior urethritis from gonorrhœa or other source of mixed infection the inflammation of the mucous membrane of the deep urethra is but a minor part of the morbid condition resulting from such infection. I cannot conceive of an acute inflammation of infectious origin limiting itself to the mucous membrane of the posterior urethra. A few subacute and chronic cases may possibly be met with in which the bulbo-membranous region is involved without extension or transference to the prostatic urethra. It is my belief, however, that in all cases, acute or chronic, in which the prostatic urethra is involved, the glandular elements of the prostate become affected sooner or later. In acute inflammation extending beyond the bulbo-membranous junction it does not seem possible that the glandular elements of the prostate can escape involvement. It is certainly open to argument whether the consideration of so-called posterior urethritis as acute or chronic follicular inflammation of the prostate rather than a disease of the urethra *per se* might not be of great practical clinical importance as explaining the extreme obstinacy of the disease and the impossibility of curing it completely by applications to the relatively small and unimportant affected area presented by the mucous membrane lining the prostate urethra. Looking at posterior urethritis from this standpoint, the question might arise whether deep injections of astringents may not defeat the very object that the practitioner strives to attain in such cases, by impeding drainage from the glandular elements and ducts of the prostate constituting

the principal seat of the infectious inflammation. Associated with these cases there is usually more or less involvement of the interstitial tissue surrounding the ducts and glands, the resulting mechanic conditions depending entirely upon the degree of involvement.

From a clinical standpoint, there would seem to be a broad line of distinction between the acute cases of follicular inflammation from extension of infection from the prostatic urethra and those that result from lymphatic absorption or infection of an abraded surface produced by traumatism, and leading to prostatitic or periprostatitic abscess. On the one hand, we have primarily all of those symptoms characteristic of irritation and inflammation of the true vesical neck—*i. e.*, the prostatitic urethra; while, on the other hand, we have much less vesical irritability with the development of more or less sudden obstruction to the outflow of urine. In acute follicular inflammation retention of urine is rare; not so in cases in which severe interstitial inflammation develops. So frequent, however, is the association of retention with prostatic abscess that the latter is to be strongly suspected in all cases of acute prostatitis in which retention is a prominent factor. Due consideration should, however, be given to the possibility of spasmodic retention in deep-seated inflammation.

In diffuse prostatitis there is usually, as a result of extension of infection from the prostatic urethra, very severe glandular inflammation. Associated with this is pronounced involvement of the interstitial tissue. In these cases, on account of the anatomic conditions already outlined, pain and constitutional symptoms are more marked than in the acute follicular form. Diffuse prostatitis may be the result of lymphatic absorption, in which event pain, rectal tenesmus and urinary obstruction may develop without preliminary vesical irritability. Abscesses may or may not occur in the diffuse variety of acute prostatitis. When they do occur they may be the result of a general infection of the organ, or an occluded duct or follicle may constitute the primary focus of infection, subsequently rupturing and infecting the surrounding prostatic tissues.

Acute Suppurative Prostatitis.—According to the classification already given, acute suppurative inflammation of the prostate may occur in any one of three forms, viz.: (1) Circumscribed abscess, single or multiple. These abscesses may involve any particular portion of the prostate; they may be of considerable size, and one or more may coalesce, forming a large abscess. (2) Disseminated suppuration, *i. e.*, miliary abscesses. (3) Periprostatic abscess, with or without suppuration in the prostate proper.

Etiology.—While usually due to local sources of infection, any of these forms of abscess may result from general pyogenic infection and may be caused by such infectious diseases as variola and mumps. Some abscesses are primarily due to extension of suppurative inflammation, while others

are due to lymphatic absorption and infection of the prostatic tissues. In some instances, in all probability, one or more of the numerous ducts of the prostate become occluded by the inflammatory swelling incidental to virulent inflammation, with consequent retention of infectious pus in the form of a small abscess cavity, the walls of which are composed of the walls of the duct or follicle involved. Such circumscribed retention abscesses constitute foci of infection of the surrounding tissues. Forming at the periphery of the organ, they may rupture into the paraprostatic tissue, with resulting abscess outside the prostate proper.

Disseminated foci of suppuration in the prostate constitute the variety that is most likely to occur from constitutional infection. The rupture of such a focus, however small, into the periprostatic tissue will almost inevitably result in abscess in this situation.

It is unnecessary to expatiate at length upon paraprostatitis: the most important points have already been dilated upon. It generally occurs as a secondary factor in some one of the foregoing forms of acute inflammation. Suppuration usually occurs, and in some cases the amount of pus may be rather startling, the pus burrowing extensively about the rectum. Retention of urine is usual in marked cases.

The subject of acute prostatic abscess is intimately blended with that of acute prostatitis. There are several points, however, in connection with prostatic suppuration that merit special attention.

Abscess of the prostate in connection with hypertrophy of the organ is more frequent than ordinarily supposed. It may occur spontaneously from infection, although this is extremely rare. Most often it is the direct result of traumatism inflicted during the treatment of the disease, or during catheterization for the relief of retention produced by it. I am of opinion that, in quite a proportion of cases of death following retention of urine dependent upon hypertrophied prostate necessitating prolonged and frequent instrumentation for its relief, the immediate cause is general septic or pus infection from suppuration of the prostate induced by the surgical interference.

Several cases have come under my observation in which the patient developed constitutional manifestations of sepsis, and finally sank into a typhoid condition and died, as a consequence of extensive prostatic and periprostatic abscess that was directly traceable to bunglesome and injudicious catheterization. In some of these cases the abscess is sub-acute or chronic, and of prolonged duration. Rupture may finally occur into the urethra, rarely externally, in which event there may be sudden relief of obstruction. It is noteworthy that some cases of prostatic abscess occurring in enlarged prostate are ultimately followed by great benefit to the primary condition. The destruction of prostatic tissue by the abscess is followed by cicatricial contraction and diminution of the mechanic obstruction produced by the enlargement. In some instances, however, the abscess cavity does not become obliterated, but remains as

a suppurating pocket, opening more or less freely into the lumen of the urethra, and giving rise to successive reinfections of the posterior urethra and bladder, or even infection of the anterior portion of the canal. This is true of all forms of prostatic abscess. In abscess occurring in prostatic hypertrophy it is interesting to note the marked diminution in the size of the portion of the prostate that happens to be the seat of suppuration. In a case recently seen, an abscess in the right lobe of the prostate in a middle-aged man with prostatic hypertrophy had produced so much shrinkage of the organ that it was hardly, if at all, larger than the normal, while the opposite side was still markedly hypertrophied and indurated.

The occasional occurrence of prostatic abscess in *prostatiques* constitutes a very practical point in the study of prostatic hypertrophy. It is by no means unusual for the first severe symptoms of prostatic obstruction in old men to occur coincidently with the formation of prostatic abscess. Inasmuch as after evacuation of the pus the symptoms practically disappear, an erroneous diagnosis may be made, the case being considered as *ab initio* one of prostatic suppuration.

That a fatal result may follow prostatic abscess, not only in old but in young subjects, must be borne in mind. A case recently came under my observation of a young man thirty-five years of age, who died of what was diagnosed as typhoid fever, but which, as the autopsy showed, was sepsis due to a large prostatic abscess. It is well in all cases of serious prostatic disease to keep a close watch for both local and constitutional symptoms of suppuration. Free incision and drainage would probably have saved the life of the patient to whom allusion has been made. In all cases of acute prostatic inflammation, especially, it is the duty of the surgeon to be on the alert for symptoms of suppuration. Oftentimes, however, a diagnosis can only be made after the pus has discharged into the urethra, bladder or rectum. Healing of prostatic abscess after such evacuation is often quite prompt, but in many cases the admixture of urine with the contents of the abscess causes serious trouble by subsequent decomposition and septic absorption.

Ano-rectal fistula may result in cases in which the abscess opens or is evacuated by the knife via the rectum. Urinary fistula communicating with the rectum, or with the ano-rectal fistula, may also develop*. Urinary fistula following evacuation of the pus via the perineum, is not infrequent.

Morbid Anatomy.—Comparatively little is known of the early stages of acute prostatic inflammation, especially of the follicular or parenchymatous form. The condition is not fatal, and opportunities for observation are consequently not numerous. So far as determined, however, the process appears to be at first limited chiefly to the mucous membrane

*I have under my care a gentleman in whom a long standing fistula exists between the rectum and prostatic urethra from this cause.

and the follicles and glands immediately tributary to the prostatic urethra; hence, a description of the morbid anatomy of acute follicular prostatitis in its incipency is also that of acute posterior urethritis. In the follicular form there is always a varying degree of involvement of the interstitial tissue, largely dependent upon the duration of the disease. The infectious inflammation probably never limits itself to the prostatic urethra; if the inflammation does not extend below the membranous urethra, however, it may possibly become limited, if not acute. In acute bulbo-membranous inflammation the prostatic urethra is almost inevitably involved sooner or later. The mucous membrane of the prostate is reddened and thickened, as is true of all inflamed mucous membranes. There is almost invariably thickening of the tissues surrounding the lymphatics and blood vessels.

Ulceration does not occur, and resulting stricture is so exceedingly rare that it is hardly worth consideration. The mouths of the prostatic and ejaculatory ducts are involved in the inflammation, thus serving to explain the facility with which it extends to the glandular tissues of the organ. In acute parenchymatous or follicular prostatitis the organ is swelled according to the degree of circulatory disturbance and periglandular swelling. If the process extends to the interglandular, muscular and periprostatic tissues, the diffuse form of inflammation is developed. This corresponds to the parenchymatous form, as described by Thompson. The organ is swelled in some cases to three or four times its natural size. The veins of the prostatic plexus are distended by dark blood. The arterial vascular supply is also engorged. The mucous membrane of the prostate is of a darker red hue than usual. Pressure causes exudation of a cloudy, reddish fluid, containing blood from the engorged capillaries and venules, inflammatory lymph, and fluid from the prostatic glands, with a small quantity of pus. Brissaud and Segond give a very clear description of the pathologic anatomy of acute diffuse prostatitis, as observed in a man dead of complicating pleuro-pneumonia. The glandular tubes were the seat of inflammation varying in intensity at different points. The internal wall of the ducts at points where the inflammation was most intense appeared to be blended with the muscular tissue by inflammatory exudate. The inequality of the inflammatory process was especially noticeable. In different places, notably at the periphery of the organ, marked pathologic changes in some of the glandular tissues coexisted with a healthy condition of neighboring glands and ducts. The epithelium lining the glandular cul de sacs and ducts was replaced by an agglomeration of new tissue elements, often filling the ampullæ of the glands completely. In some instances the degenerative changes had obliterated the normal glandular outlines.

Prostatic suppuration presents itself in several forms. In the follicular form it is similar to that in gonorrhea or urethritis; the pathologic condition from which the process in the prostate was originally derived.

Circumscribed abscess may form in follicular prostatitis. One or more glands become infected, and incidentally their ducts are involved. Occlusion of the latter may occur and a suppurating cyst-like accumulation of pus result. One or more of these accumulations may rupture and contaminate the remainder of the gland. Such abscesses are often responsible for recurrent infection. Miliary abscesses may result from acute suppuration. They may be single or multiple, and more or less disseminated. Large abscesses may be found in some cases. Abscess may occur in the cellular tissue surrounding the prostate: Periprostatic abscess. Some prostatic abscesses are very large. Guyon reports a case in which the urethra was completely dissected out of the prostate, and the urethra completely surrounded by pus. Abscess cavities are generally multilocular and trabeculated. These abscesses may open into the urethra by one or numerous openings.

Lallemand, many years ago, called attention to the fact that in acute prostatitis the ejaculatory ducts may be dilated and thickened from involvement of the mucous membrane. They may be ulcerated or their lumen diminished or even occluded. The seminal vesicles are usually thickened, dilated and contain reddish or puro-sanguinolent fluid. Regarding the accuracy of Lallemand's observations, a certain element of doubt is warrantable; many of his patients were subjected to treatment by the *porte-caustique*, which in itself was not only likely to set up acute prostatitis, but followed by occlusion of the ejaculatory ducts.

In some cases of suppuration the entire glandulo-muscular structure of the prostate is destroyed, as in the case outlined by Guyon. Such a case has come under my observation. It is a matter of regret that the autopsy in this case was not made with more care, the specimen being by no means perfect. The prostate, however, was practically replaced by a suppurating cavity with quite thick walls, apparently representing the capsule of the prostate in conjunction with inflammatory new growth. The specimen was so damaged in removal that it was impossible to obtain a clear idea of the relation of the urethra to the abscess.

Symptomatology.—In acute follicular prostatitis the symptoms are mainly subjective. Frequent and painful urination, pain being especially marked at the termination of the act, and in some cases a certain amount of blood mixed with the last few drops of urine, constitute the principal local symptoms. A feeling of perineal distress, with pain radiating along the urethra into the spermatic cords or down the inner aspect of the thighs is frequently experienced. In some cases there is more or less pain and tenesmus. The stools are likely to be somewhat painful. There may be considerable constitutional disturbance, but, as a rule, this is very slight, excepting where there is more or less diffuse inflammation. In the diffuse and suppurative varieties there is more or less urinary obstruction. Complete retention may come on and persist until the abscess is evacuated, when speedy relief is experienced. When

pyogenic infection occurs independently of follicular inflammation, there may be comparatively little vesical irritation, the symptoms of urinary obstruction preponderating. This is especially apt to be the case in acute abscesses that develop in the course of prostatic hypertrophy.

In diffuse and suppurative prostatitis, pain and constitutional symptoms are especially marked. Depression is likely to be profound, and in *prostatiques* especially the patient may sink into a typhoid state and die with all the symptoms of constitutional pyogenic infection. True pyemia may result as a consequence of localized suppuration. The formation of pus is likely to be heralded by a distinct chill, followed, in some cases, by a succession of chills.

In some cases of acute prostatitis the disease develops very suddenly: in others a few hours, or possibly several days, may elapse before the symptoms become prominent. During this period the patient experiences premonitory sensations of weight and fullness in the perineum, with frequent micturition and a certain degree of depression incidental to irritation of the vesical neck. If abscess forms, severe throbbing pain is likely to come on. This may be lancinating rather than throbbing, radiating, as already stated, into the urethra, groins and thighs. The slightest exercise tends to aggravate the symptoms. The patient very often finds quite early in the course of the disease that slight perineal pressure elicits considerable pain and tenderness, and possibly vesical irritability.

Cystitis may coexist with acute prostatitis, but in my opinion this is infrequent, all of the symptoms being usually explicable by inflammation of the prostatic urethra. In cases having their point of departure in follicular inflammation, the urine contains muco-pus from two sources: (1) That which is directly washed out of the prostatic urethra by the outflowing urine; (2) that which has taken the direction of least resistance backward into the bladder during the intervals of micturition. The first and last portions of the urine in follicular prostatitis are likely to contain considerable muco-pus, the mid-stream being comparatively clear. When there is no follicular inflammation, the condition being primarily diffuse inflammation or localized inflammation incidental to infection and followed by suppuration, the urine contains nothing characteristic until the abscess ruptures into the urethra or bladder. The patient then experiences sudden relief in the perineum and ano-rectal region, the urine flows with perhaps its usual freedom, or at least much more easily than before the rupture of the abscess, and pus suddenly appears in the urine. It does not usually escape from the urethra during the intervals of micturition unless secondary infection of the anterior urethral mucous membrane occurs, or the point of rupture is located anterior to the bulbo-membranous junction.

The objective symptoms of acute prostatitis vary with the degree of diffuse inflammation. Where the pathologic process is largely follicu-

lar, as in a certain proportion of cases of so-called posterior urethritis, local examination elicits very little save more or less tenderness on deep perineal pressure and manipulation of the membranous and prostatic portions of the urethra per rectum. Deep pressure behind the pubes may elicit some tenderness referable to the vesical neck. In the more severe types of diffuse and circumscribed suppurative inflammation, more or less heat, swelling, tension and tenderness of the perineum are noticeable. The prostate presents itself as a hot, tender tumor projecting into the rectum antero-posteriorly. The degree of enlargement varies with the extent of interstitial inflammation, and may be so marked that the finger cannot be introduced into the rectum without considerable difficulty and the infliction of severe pain. When suppuration has occurred a boggy, edematous, uniform or circumscribed bulging of the prostate and periprostatic tissues into the rectum is noticeable. Later on, fluctuation may be evident.

Treatment.—The treatment of acute prostatitis should be active. A brisk mercurial purge should be given, followed by a full dose of some saline in the course of three or four hours. This will unload the portal circulation and produce general depletion. An excellent plan is to administer tablet triturates of calomel, one-half grain every three hours until four or five doses have been given. Coincidentally, four-ounce enemas of saturated solution of sulphate of magnesia, containing glycerine in the proportion of about one to three, should be given. This may be repeated until a number of watery evacuations have resulted. This is the ideal method of pelvic depletion, and is quite as valuable in prostatic disease as in pelvic and abdominal inflammation in the female. Having fulfilled this indication, there are several special measures that are essential. The febrile symptoms call for aconite or veratrum viride, remedies far more reliable than antimony—recommended by Thompson. Ergot and hamamelis are probably beneficial. They are certainly philosophic remedies from a theoretic standpoint. These remedies may advantageously be combined with gelsemium and the bromide of potassium, anaphrodisiac remedies having a special sedative effect upon the inflamed organ. Hypodermic injections of pilocarpine are serviceable, this remedy being a powerful derivative. After the bowels have been thoroughly evacuated, opium is the most effective remedy. It relieves pain and strangury, lessens the frequency of micturition, and counteracts nervous depression. All anodynes act best in acute prostatitis when given by suppository. If the rectum be irritable, the anodyne may be injected into the gut in the form of a thin ointment. Iodoform or eucyphen may be combined with morphine and belladonna or hyoscyamus, and administered by suppository. Caution is necessary in using anodynes per rectum, as most patients are very susceptible to them when so given. If the administration of anodynes per os be con-

sidered preferable to rectal medication, codeine will be found reliable and much less disagreeable than other preparations of opium.

The diet should be restricted to milk or other unstimulating fluid aliment, and the patient should lie quietly upon his back, with the hips slightly elevated. He should be impressed with the absolute necessity of perfect rest for some weeks, for in no disease is movement more likely to aggravate the condition than in prostatitis. In many cases in which acute prostatitis assumes a subacute or chronic form and persists indefinitely, movement, sexual excitement and alcoholic and dietetic indulgence are in great measure responsible. Too much stress cannot be put upon the necessity of perseverance in the rules of genito-urinary hygiene.

Local depletion should be resorted to early, and repeated from time to time as required. This is best accomplished by means of leeches. Five to eight leeches should be applied to the perineum and about the anus, and the bleeding encouraged by warm fomentations. The *rationale* of this treatment is obvious, if the intimate association of the prostatic and inferior hemorrhoidal plexuses be considered. After hemorrhage has ceased, hot poultices or fomentations may be applied to the perineum. Ice has been advocated, rectal suppositories of ice being sometimes useful. Hot water containing laudanum is often serviceable as an enema. Simple hot enemata, several quarts of water being used at each sitting, may be given several times daily with great advantage.

Interference with the urethra should be avoided, the usual treatment for gonorrhea being suspended during the course of the prostatitis. The use of injections may determine the formation of an abscess in an otherwise slight inflammation.

Hot sitz baths, twice or thrice daily, are of marked benefit in prostatitis. They must be very hot and continued for from half an hour to an hour. Should retention occur and opium and hot sitz baths fail to relieve, then, and then only, is catheterism permissible. A small, soft catheter should be carefully used. This failing, aspiration may be required. Rectal examinations should be made as infrequently as possible. The surgeon is usually over-anxious to observe the progress of the case, and in his misplaced enthusiasm is apt to do injury. As the acuteness of the inflammation becomes less manifest, counter-irritation with iodine or blisters to the perineum may be of great service. Systematic and repeated blistering may perhaps prevent the supervention of chronic inflammation.

Under careful treatment the inflammation usually begins to subside and the symptoms improve within a few days, but it is likely to be several months before the prostate assumes anything like its normal size. The slightest excess is apt to cause a relapse, and the patient is ever after predisposed to fresh attacks of inflammation—reinfection—from apparently trivial causes. Slight indiscretions are liable to prevent res-

olution and cause the inflammatory process to become chronic. Prostatitis may consequently be a very unsatisfactory affection to treat, even in the most tractable and conscientious patients. Recurrent infection of the urethra simulating a fresh gonorrhea is one of the most annoying features of the disease.

In a general way, the liability to suppuration in acute prostatitis depends upon the degree of thoroughness with which the foregoing measures are carried out. When the inflammation is due to the absorption of pus microbes, and their products, through the medium of an abrasion or via the lymphatics without abrasion, with resulting interstitial prostatic infection, suppuration is almost inevitable. In the ordinary diffuse form of inflammation, however, and in the follicular form which precedes it, energetic treatment may prevent abscess.

The treatment of acute abscess of the prostate is obviously that of acute prostatitis. Until pus is known to have formed or a strong suspicion of its presence is justifiable, surgical intervention is contraindicated. While conservative treatment by means of poultices to the perineum and rectal injections of hot water may be justifiable in cases in which the presence of pus is extremely doubtful, the practitioner should beware of carrying conservatism too far. Serious results occur from a large accumulation of pus in and about the prostate long before fluctuation is manifest. Fluctuation should always be carefully sought for, but in many cases operation is demanded long before perineal fluctuation can be detected. When the abscess involves the periprostatic tissue, or burrows toward the rectum, digital examination via the gut is likely to detect either well marked fluctuation or the peculiar edematous condition characteristic of the presence of pus.

As soon as the diagnosis of abscess is justified by the development of perineal induration and swelling, characteristic edema, or distinct fluctuation on rectal examination, a free incision in the direction of the prostate should be made in the perineal raphe. This locality should always be selected even where well marked fluctuation on rectal examination indicates the presence of pus in the periprostatic tissue. If pus is not found by the perineal incision, the surgeon can console himself with the reflection that he has adopted the best means possible to prevent abscess. Should suppuration eventually occur, the incision supplies an outlet in the most favorable direction. If several foci of suppuration be found, they should be freely opened and drained. Iodoform gauze drainage should be adopted after evacuation of the pus. Infiltration of urine may possibly occur after the opening of prostatic abscess, but is very rare.

When a prostatic or periprostatic abscess is opened, or discharges spontaneously via the rectum, extensive infection, with the formation of ischio-rectal abscess and external fistula or a permanent internal fistula, may result. In all cases in which the abscess has been evacuated into

the rectum, antiseptic irrigation is necessary. Care should be taken, however, to avoid poisoning the patient by too strong antiseptic solutions. Carbolic acid and mercury bichloride are especially open to impeachment on this score. A saturated solution of boric acid is much safer, although necessarily not so efficient. It may become necessary to divulse the sphincter ani to relieve rectal tenesmus or secure perfect drainage. By putting the sphincter at rest it may be possible to induce healing without the necessity of more serious operative procedures. In the event, however, that a permanent fistula results, it should be dealt with as in ordinary cases of ano-rectal fistula. When the abscess ruptures, or is evacuated by the perineal route, there is danger of permanent urinary fistula. When the pus is evacuated in the direction of the urethra, the repeated formation of deep periurethral abscesses may eventually result in perineal fistula.

When the pus is external to the prostate in the paraprostatic tissue, there is less danger of infiltration of urine and urinary fistula than in cases in which the prostate proper is involved.

General supportive measures, and possibly the administration of stimulants, may be necessary after the evacuation of a prostatic abscess. This course should be invariably adopted in cases of prostatic abscess in *prostatiques*. Should general pus infection occur in the course of prostatic abscess, as it is likely to do in old, cachectic, and debilitated subjects, death is practically inevitable. In retention from prostatic inflammation or abscess, especially in old subjects, it may be impossible to evacuate the urine with the ordinary catheter. The catheter *coude* of Mercier may be introduced much more readily than the ordinary variety. The soft Nelaton catheter is often unsatisfactory. In passing the elbowed catheter, the superior urethral wall is so closely hugged by the beak of the instrument that there is comparatively little danger of its penetrating the abscess cavity. Instances have been known where the cavity of the abscess has thus been penetrated and mistaken for the bladder. The important fact to be remembered is that it is far better to evacuate an abscess by external incision than to produce an internal opening into the urethra or allow such an opening to occur spontaneously. It is admitted that in many cases in which the abscess opens in the direction of the urethra the patient speedily recovers, but in a certain proportion of cases permanent infection results with all the dangers of urethritis, cystitis, and recurrent prostatic abscesses.

In all cases of prostatitis after the acute symptoms have subsided, deep urethral and vesical irrigations are necessary for some time to remove the infection upon which the prostatic inflammation depended, and which may bring about its recurrence. The permanganate of potassium is, of course, the standby. Instillations of argol, 5 to 10 per cent.; silver nitrate, $\frac{1}{2}$ to 2 per cent.; argonin, 5 to 10 per cent.; albargin, 5 to 10 per cent.; argyrol, 5 to 20 per cent., all are serviceable. Massage is demanded in all cases of prostatitis, when the acute symptoms have passed and the gland will tolerate the finger.

EDITORIAL COMMENT.

RELIABILITY OF CANCER STATISTICS.

As a science, statistics constitute a branch of the science of logic and may be regarded as consisting in a systematic observation and classification of facts in any domain of human activity. It is the peculiar office of statistics to discern the direction of progress and to measure both the actual and relative strength of the forces which impel it. To the immense importance of statistics, the numerous bureaus of investigations maintained by all governments bear witness. The governmental exhibits of this and other countries at the Louisiana Purchase Exposition, clearly demonstrated the value of statistical inquiries, which have aptly been termed instantaneous photographs expressed in figures.

In medicine, however, statistics have, within recent years, fallen into disrepute. The condemnation by W. A. Freund, of statistics as being "the vilest prostitute," and Talleyrand's dictum: "La statistique c'est le mensonge au chiffres," signify only too frequently the real character of certain medical statistics. On the other hand, there are writers who denounce statistics in order to cover lack of accuracy and thoroughness in their own reports. It is high time that medical statistics should be lifted from arbitrary usage to the realms of law and system. In medicine we cannot do without the experience gained by others, but the mass of information is so great that the mind cannot always grasp it, and we are obliged to reduce the available data to tables of figures. This is true especially in cancer of the uterus, where we are confronted by the question which of the operative methods recommended we should employ in a given case. We must, of necessity, accept that method which yields the greatest percentage of cures, and we would be completely at sea had we not reliable statistics at hand from which we could draw our conclusions.

To Winter (Transactions of the German Gynecological Society, 1901), belongs the credit of having systematized the collection of cancer statistics. He introduced the "absolute Heilungsziffer" (absolute percentage of cures) into our calculations. His mode of compiling statistics was completed and improved upon by Waldstein (*Zentralblatt f. Gynäkologie*, No. 43, p. 1286, 1904), whose suggestions are now accepted by many. Werner (*Ibidem*, No. 1, p. 12, 1905), recently has simplified the somewhat complicated formulæ of Waldstein. He demands that in future all statistics which claim recognition should give the following four figures:

1. How many women, in a given clinic, have been admitted for cancer?
2. How many of these women have been operated upon?
3. How many of the operated cases have died after operation?
4. How many of those who survived the operation are cured after five years?

We, then, obtain the "absolute Heilungsziffer," by computing the ratio of figure 4 to figure 1.

According to Werner, the following exceptions must be made:

(a) Those cases which are yet operable but do not submit to an operation. Their number will be but small. They should be left out entirely, because a patient who does not submit to treatment is like one who has not sought treatment at all.

(b) Those that have died from intercurrent diseases or cannot be traced. In doubtful cases they should be counted as recurrences.

(1) If, however, a case has been under observation for five years, without a recurrence, she is considered cured irrespective of her future condition, or whether she can be located or not.

(2) If a patient dies two years after operation from an intercurrent disease, and careful post-mortem fails to detect the slightest trace of a recurrence, whether in the scar or in the glands, she can be counted as cured. If, however, such negative post-mortem findings be made before the end of two years, the patient should be counted as recurrent. All patients who die within the first five years after operation from an intercurrent disease, no post-mortem being made, and all patients lost from observation within this period, must be considered as recurrences.

It goes without saying, that in every case the diagnosis cancer, must be supported by microscopic examination.

It is evident that statistics which comply with these postulates, will be practically exempt from all objections, and will give a true picture of the efficacy of the respective method of operation.

PURE MILK.

The St. Louis Pure Milk Commission, which has for its prime object the reduction of the death rate in children, has enlarged its scope, and is now not only endeavoring to render the milk as harmless as possible, but is also endeavoring to encourage the production of the highest grade of milk. With this end in view, a set of rules has been adopted for dairies for the standard of excellence of milk and cream. A certification committee has been appointed, composed largely of physicians, whose function it is to investigate the conditions of dairies furnishing the milk supply of the city of St. Louis. The dairymen need not avail themselves of the opportunity to have their dairies inspected and their products examined unless they desire to do so. The commission desires to do nothing prejudicial to their interest. "The experience of dairymen, however, in other cities under milk commissions has shown that it is to the advantage of the better class of milk producers to have the excellence of their milk certified to by a commission composed of citizens not financially interested in any dairy, but simply anxious to improve the health of children and persons in delicate condition who depend upon good milk for their welfare."

A fee of 1 per cent. of the gross receipts for the milk and cream certified to will be charged by the Pure Milk Commission in order to defray the expenses which the commission will incur. This will not amount to one mill per quart of milk, and will not appreciably affect the cost of this milk to the consumer.

The commission offers those dairymen complying with their requirements the use of caps on their milk bottles with the words "Certified by the St. Louis Pure Milk Commission." They will also publish from time to time a list of the dairies whose milk it certifies, together with a condensed statement of the requirements which such milk must meet. Aside from the number of physicians the certification committee will have among its members a chemist, a bacteriologist and a veterinary surgeon, whose duties it will be to inspect the dairies as well as to examine the products chemically and bacteriologically.

The rules laid down by the certification committee to govern the producers of milk are very strict, both with reference to the conditions which must be maintained about the dairy and about the persons handling the milk and the utensils, etc., and the delivery of same. The good which may come from an institution of this sort, prompted by no motive other than the welfare of the community at large, will be immeasurable.

EXAMINATION OF CHILDREN WITH REFERENCE TO BEHRING'S THEORY OF TUBERCULAR INFECTION.

As is well known, Behring regards infection through cow's milk in infancy of the utmost importance in the etiology of tuberculosis. According to this view an infantile tubercular infection is set up, which predisposes to a later phthisis. This theory has been abundantly refuted, and it has been shown that proof is entirely lacking to prove that an infantile infection must precede every case of phthisis. Nageli has shown that tubercular changes are found in only 20 per cent. of children dying before the age of ten. Behring, however, maintains that such infantile infection need not necessarily leave any anatomical changes. The tubercle bacilli get into the circulation and may cause only functional disturbances, or anatomical changes which do not persist. If this view were correct, it would be impossible to demonstrate the existence of a pre-existent, latent tuberculosis by histologic examination. Such proof would be furnished by the finding of tubercle bacilli in the blood. Beitzke (*Berlin. Klin. Woch.*, 1905, No. 2; *Centrabl. f. Kinderheilk.*, March, 1905.) has studied the question from this view point. He examined forty-eight cases very carefully, taking the blood from the right heart of children at the post mortem table. The children ranged in age from two days to nine years. In no case was there any microscopic evidence of tubercular lesion in any organ. The blood from the heart was injected into guinea pigs. In forty-seven of the forty-eight cases the result was absolutely negative; in the other case the result was not definitely positive. Tests by other methods were also negative. So far as they go, these observations would also speak against the correctness of Behring's views as to phthisiogenesis.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

Pleurisy and Its Significance in the Diagnosis and Treatment of Abdominal Diseases.—AUERBACH (*Muenchener Medicinische Wochenschrift*, No. 10, 1905).—It is a well-known fact that in acute and chronic inflammatory processes of the peritoneum, and the abdominal organs in close proximity to the diaphragm, the pleura often becomes involved. Tilger found in a series of 122 general acute and subacute cases of peritonitis, that the pleura was more or less involved in forty-one. In other words, in over twenty-five per cent. of these cases pleurisy accompanied peritonitis.

A careful review of a long series of cases of perityphlitis in the Gerhardt clinic showed the existence of a complicating pleurisy in forty-eight per cent. Pleurisy has also been observed in tuberculosis and carcinoma of the peritoneum, in abscess of the liver and spleen, echinococcus of the liver, cholangitis, cholecystitis, and chronic cirrhosis of the liver.

The author reports a series of five cases in which the presence of a slight secondary pleurisy aided materially in making an early diagnosis of disturbances primary in the abdominal cavity. He maintains that often in obscure diseases of the abdominal viscera, with an entire absence of local symptoms, but continued fever and increasing debility, the diagnosis can be made by the discovery of a slight secondary pleurisy. An early puncture into the pleural cavity may reveal pus, or serum, the nature of which may even indicate the character of the primary process. This, however, is seldom.

The Communicability of Cerebro-Spinal Meningitis.—BUCKINGHAM (*Boston Medical and Surgical Journal*, No. 16, 1905) reports a series of 110 cases of cerebro-spinal meningitis treated in the Boston Children's Hospital during the past seven years. The entire number were treated in the open wards, intermingled with other patients, and were in no way isolated. In spite of this fact no case has ever originated in the hospital, either among the patients, nurses, or other members of the hospital staff. No directions have been given to nurses as to the handling of these cases other than the general precautions always taken in a children's hospital. Articles that may have been used in a lumbar puncture were always disinfected and the same precautions were observed when nasal feeding was necessary.

The author believes that these observations show that living in the same room and breathing the same air with patients suffering with cerebro-spinal meningitis is not itself dangerous, and that some other way of transmission must be sought.

Experiments Relative to Constipation.—GLAESNER (*Wiener Klinische Wochenschrift*, No. 45, 1904) reports a series of experiments relative to constipation produced artificially in animals. In the first series, dogs were given large doses of opium, which limited the actions of the bowels to once in three or four days. In these cases, there were practically no changes in the urine nor any constitutional symptoms.

In the second series of experiments he endeavored to produce constipation by means of intestinal stenoses, tying a ligature around the small intestine so as to leave only a small opening. But this method also failed to produce a more obstinate constipation.

In the third series the desired results were met with. Dogs which had been on a special diet, and under strict observation, until it was determined that the amount of nitrogen ingested corresponded with the amount excreted, were operated upon as follows: A section of small intestine 40 c.m. long was divided at both ends and reversed, the lower end being fastened above and the upper end of the section to the loop below, thereby breaking the chain of peristalsis at this point. The dogs rapidly recovered from the operation, and movements of the bowels secured once every ten or twelve days. The ingesta and excreta were carefully observed, and it was found that the nitrogen and ammonia salts excreted in the feces gradually decreased from the time of operation, while they increased correspondingly in the urine. The dogs gradually lost in weight, developed a marked cachexia, and finally died. This the author attributed to an absorption of toxins. He believes that certain gastro-intestinal disturbances in children, accompanied by constitutional symptoms, can be attributed to stagnation of the feces, and that if the excreta were carefully examined in these cases the diagnosis could be made readily.

Partially Afebrile Estivo-Autumnal Infection, Having Its Origin in New York City.—POMEROY (*Medical News*, No. 1673, 1905) reports a case of pernicious malaria in which there were chills and sweats in the absence of fever. The patient had not been outside of the city in fifteen years. While under observation, he had severe chills and sweats, with the temperature not over 99.6. The examination of the blood revealed the presence of numerous crescentic and ovoid forms of malaria plasmodia. Preparations were made every two hours for two days, and no other varieties were found. Fifteen grains of quinine were given every four hours. Within twenty-four hours the chills and sweats decreased in severity, and the temperature now went up to 100.2. Within a week the patient had recovered entirely and the plasmodia disappeared from the blood.

The unusual features in the case were: (1) estivo-autumnal fever, having its origin in New York City, and (2) chills and sweats without fever, the latter appearing only after the administration of quinine.

General Gonococcus Infections.—WYNN (*Lancet*, No. 4250, 1905) believes that entirely too little attention is paid to the subject of general infections due to gonococci. In every case of pyæmia of uncertain origin one should consider this possibility. He recently observed three cases in the male, in each of which he was able to demonstrate the gonococci

in the blood and cultivate them on serum or blood agar as long as sixteen hours after death. In one case there was pelveo peritonitis, and in all three there was degeneration of the heart muscle, and the kidneys, abscesses in the lungs, and effusion in various joints.

The origin of the trouble cannot always be determined. Peri and paraurethral abscesses, purulent prostatitis and buboes may be the source of the general infection. Acute as well as chronic urethritis may be the source. That the infection is general is proven by the fact that the gonococci may be cultivated from the blood taken from any part of the body.

Cases of Enteroptosis and Cardiaptosis, with Return to the Normal.—EINHORN (*New York Medical Journal*, No. 15, 1905) reports the recovery of six cases of movable kidney and visceral ptosis. Inanition is the most important etiological factor. A high degree of long-continued subnutrition is sufficient to cause marked enteroptosis and cardiaptosis.

Predisposing causes are the corset, constriction of the abdomen, getting up too soon after confinement, etc., etc.

The treatment consists mainly in the wearing of a properly fitted abdominal supporter and ample feeding. That the last factor is the more important of the two may be inferred from the fact that the prolapsed heart in these cases returned to the normal after an increase in bodily weight. Ample and proper feeding is the point of permanent importance.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

Surgical Tuberculosis in the Abdominal Cavity, with Special Reference to Tuberculous Peritonitis.—WILLIAM J. MAYO, (*Journal of the American Medical Association*, April 15, 1905).—One pertinent fact to which the author calls attention in this article is that post mortem observations while of extreme value must be taken with a certain degree of reservation from the fact that they point only terminal conditions. Again, statistics must not be allowed to influence us wholly since it is possible to juggle them sufficiently to make them prove almost anything. The surgical material at Rochester coming as it does largely from an agricultural district, produces relatively a small amount of pulmonary tuberculosis, while localized tuberculosis in other parts of the body is relatively much more common. The reason that so much peritoneal and other abdominal tuberculosis is seen in the country is that uncooked milk is largely an article of diet on the farm while it is not so much used in the city in the raw state, it being necessary to sterilize it before it can be transported. During the past ten years 6408 abdominal operations were done at Rochester and of these 184 were for some form of tuberculosis. It is best, where possible, to excise the tuberculosis intestine and not to leave an ulcerating mass to its own devices. In 44 cases a well walled

off process in the Fallopian tubes was found and in these instances there was no evidence of tuberculous peritonitis. But where the tubes were free and the outer ends found stiffened and pointing up into the free peritoneal cavity, there was always dissemination of the process on to the peritoneum. Tuberculous peritonitis in the female is four times as common as in the male, showing that a large number of these infections must come through the tubes. In earlier days we thought that all we had to do for tuberculous peritonitis was to open the abdomen and let in the sunlight but so many of these cases recurred that a local source of infection had to be thought of and this has usually been found by the Mayos to be in the tubes or appendix. Of the 26 patients whose tubes were removed, 25 recovered and not one has since been the subject of a secondary operation, although in some instances the abdomen had been opened previously as many as four times simply to permit the escape of fluid.

The Formation of Bone in a Struma.—SEHRT (*Centralblatt fuer Chirurgie*, No. 13, 1905).—The author examined 28 goiters which were removed in the clinic at Freiburg and in 14 of them found a more or less extensive deposit of calcium salts. A distinct formation of bone had taken place in five cases. This was proved histologically by the presence of all of the requisite elements. These were found at the center as well as at the periphery of calcified areas and in some instances a well developed marrow was seen. It contained fat, blood vessels, giant cells and all of the other well-known characteristic features. The author is of the opinion that a careful investigation will show that in about 35 per cent. of calcified strumæ bone is to be found.

Surgery of the Large Intestine.—PANTALONI (*Archives Procr. de Chir.*, No. 3, 1905).—This author adds another to his many interesting contributions in the field of gastro-intestinal surgery. He opens with the statement that the surgery of the small intestine and stomach is so well worked out that we may be said to follow well fixed rules. However, this is impossible in the case of the large intestine because there are so many peculiar anatomical characteristics of different portions of the large bowel that we must vary our technique according to the field in which we work. The caecal region is affected by the transformation from small to large bowel, by the presence of the appendix and by the fact that this region is rather firmly anchored. On the other hand, the sigmoid presents absolutely opposite characteristics, and so on, if one desires to enumerate at length. Two salient rules, if followed, will go far toward assuring success in operations on the large bowel. The first is that the portion to be operated upon must be rigorously isolated, the second is that the peritoneum to the outer side of the bowel must be divided longitudinally before anything else is attempted. The four cases which Pataloni reports were operated upon successfully. They were all resections of the colon, the first for a fecal fistula, the second for the same cause and the third as well as the fourth for cancer. In the first instance he made an end-to-side implantation, in the second he did the same thing, in the third he made an end-to-end anastomosis and in the fourth, again, an end-to-side union.

Transperitoneal Ligation for Aneurism of the External Iliac Artery.—CURRIE (*Annals of Surgery*, April, 1905).—About six months before the operation to be described, the patient, a man of 36 years, felt a sudden pain in the right groin after heavy lifting. When first seen his aneurism was increasing so rapidly in size that an early operation was determined upon. The work was done through a median abdominal incision with the patient in the Trendelenberg position. The peritoneum internally to the sigmoid was divided and the artery double ligated with silk. The vein was not seen at all during the operation and pulsation ceased in the aneurism as soon as the procedure was over. Eight days later the pulsation returned in the posterior tibial artery and at the end of eight weeks the patient was discharged completely cured. The author, judging from the way he writes, seems to have found the operation easier than he anticipated and he seems very enthusiastic over the possibility of transperitoneal ligation of the common, external or internal iliac arteries.

The Investigation of Progenitur Thyreopriver.—LANZ (*Beiträge zur Klinisch. Chirurg.*, Band 45, Heft 1).—The author has continued his most interesting experiments for the past eleven years upon animals of various species to find out the effect upon the offspring of thyroidectomy in the parent animal. A hen whose thyroid had been removed laid an egg weighing 5 grams, while a sister animal produced them weighing 50 to 60 grams without any trouble. The opposite of this is shown very nicely by the fact that the feeding of thyroid substance will produce an unusual number of eggs; for instance, it was possible to make such a hen lay just three times as many eggs as the control animals were seen to do. He removed the thyroid of a large number of rabbits, but all of them died of cachexia before the age of reproduction was reached. Nothing could be done with cats. They died of acute tetany almost as soon as operated upon. He had very little better success with dogs. The sexual sense of the few that lived seemed to be completely destroyed. He did thyroidectomy on thirty-eight goats, and made the following interesting observations: Animals under one-half year gave all the symptoms of cretinism. Animals from one to four years old were much less acutely affected. It is interesting to note that herbivorous animals required much less antiseptic precautions. Animals which have horns very soon lose the same or have them deformed. Those over five years of age are not acutely affected, but soon grow old. The development of the bones is later in cretins than in others. It is very interesting of late to note the changes produced by thyroid feeding in artificial cretins produced by the complete removal of the thyroid gland in the early years of the operation before the present limitations were placed upon the procedure by Kocher. A few of these early cases have been hunted up and restored to practically normal individuals simply by this treatment. Another very interesting case was that of a little girl who had been born of a slightly cretin type. In only two years of thyroid feeding she increased remarkably in size, menstruation commenced and she was restored to the state of a practically normal individual.

Popliteal Aneurism.—FAURE (*Bulletins et Memoires de la Societe de Chirurgie de Paris*, No. 11, 1905).—The patient whose case is about to be recited in detail, was a man of thirty-three years. He gave no hereditary tendency or history of disease. Two months previous to entering the hospital he had noticed in the popliteal space of the right leg a new growth. During the intervening period this very slowly increased. There had been no pain, and the patient seemed well in every other particular. There was no difficulty at all in making this out as an aneurism and surgical treatment was undertaken on the 14th of January, 1905. The operation was done under local anemia, and after the growth had been isolated an attempt was made to remove it, commencing above. During the procedure it tore and a large blood clot was evacuated, after which it was removed and the free remaining arterial stumps securely ligated. That same evening the foot was cold, and on the next day discolored. Gangrene set in very shortly, and two weeks after the original operation an amputation had to be performed. This would not have been necessary, as the author thinks, had it not been that the aneurism was so high as to include the origin of the articular arteries, hence there was little chance for anastomosis after interruption of the main current. He thinks at the same time that the Esmarch bandage may have had something to do with the matter. Then it seems that the circulatory apparatus of the patient was at fault in general, since one of the flaps in the amputation wound sloughed.

Surgery of the Posterior Mediastinum, Its Past and Future.—FAURE (*Journal of the Johns Hopkins Hospital*, April, 1905).—All of the earlier operations upon this portion of the body were simply tentative and ended in failure. The main reason for this was that sufficient access was not gained to the thoracic viscera. Faure succeeded twice in resecting the esophagus without killing his patient, although both patients died later through other causes. Still he feels that his experience, which has been far more favorable than that of any one else, has pointed a proper line of approach. Others have attempted to operate through an opening made by dividing two or three ribs, beginning with the second, third or fourth, but Faure claims sufficient access can be gained only when the first rib has been divided, when the shoulder, with the rest of the chest wall, can easily be swung out as far as necessary. The posterior mediastinum then opens up like a book, and nothing is easier than to get at the contents of the chest. Faure hopes that in the future we may be able to save the lives of patients afflicted with cancer of the esophagus. Both of his earlier patients died of a slow suffocation, due to the fact that he left a drain in the posterior mediastinum. With each inspiration more and more air penetrated the space, and after a while the inevitable consequence was noticed. In future he would use no drainage of any kind.

Cachexia and Tetania Thyreopriva.—LANZ (*Centralblatt fuer Chirurgie*, April 1, 1905).—The author has been forcibly impressed by the fact that the goats in Switzerland are very much less affected by the removal of the thyroid than are the animals native to Holland. At Berne he did the operation thirty times and but one animal died of acute tetanus. In

Holland he performed the same thing twenty times, and nine of his animals died of tetanus within the first week after operation. The same marked difference was noticed in the human subject between Vienna and Berne in the older days when the complete thyroid was removed. In Switzerland the most common result was cachexia or myxedema, while in Vienna Bilioth produced tetany by removing the gland completely. It seems, then, that the functional value of the gland differs greatly in different countries, and strange to say, the thyroids of animals in Switzerland are frequently found diseased, just as are those of the human subject, as is well known, in the same locality.

DIAGNOSIS.

IN CHARGE OF

A. E. TAUSSIG, M. D.

The Significance of Fragmental Tubercle Bacilli in the Sputum.—SPENGLER (*Zeitschr. f. Hyg.*, vol. 49, No. 3, 1905).—In the sputum of patients with pulmonary tuberculosis, the tubercle bacilli are sometimes seen to be not of the normal shape and size, but very short and slender and lying in heaps as if the bacilli had broken into fragments. This phenomenon has sometimes been interpreted to mean a very acute process, sometimes as signifying a good prognosis and, again, as without meaning. It occurs, however, much more frequently in the bacilli of bovine than of human tuberculosis, and especially if the conditions for the growth of the bovine tubercle bacilli are relatively unfavorable. For this reason the writer interprets the occurrence of large numbers of very slender, fragmented tubercle bacilli in the sputum, as indicating not only an infection with bovine tubercle bacilli, but also a very energetic resistance on the part of the body to the spread of the process. On the whole, therefore, this phenomenon would be of decidedly favorable prognostic significance. The very interesting observations and conclusions of the writer are of importance but require confirmation.

A Functional Test of the Diseased Heart.—M. HERZ (*Deutsch. med. Wochenschr.*, No. 6, 1905).—The power of the heart to do its work may be tested as follows: The physician, allowing the patient's elbow to rest in his left hand, supports the wrist lightly with his right. The patient is then made to extend and flex the forearm as slowly as possible, doing practically no work except that necessitated by the effort to keep the forearm from moving more rapidly. The pulse is counted before and after the test. If the heart is normal there is practically no difference in the two pulse-rates, but the slightest morbid condition shows itself in a marked retardation of the heart's action as a result of the test. In obesity the test is positive when there is actual degeneration of the myocardium, but not when the interference with the heart's action is purely mechanical.

The Tuning Fork in Physical Diagnosis.—R. N. WILSON (*Medical Notes and Queries*, No. 2, 1905).—The determination of the presence, location and extent of pulmonary cavities is often attended with difficulty. The writer has recently seen a caseous pneumonia with amphoric breathing, a tympanitic percussion note, a brilliant cracked pot sound and whispered pectoriloquy, in which the autopsy showed no cavity to be present. The use of a tuning fork will often aid in the diagnosis of cavities. The stethoscope is placed over healthy lung tissue and the tuning fork, set into rapid vibration and placed with the handle touching the skin, is made to approach the bell of the stethoscope. As the fork passes from normal tissue to a consolidated area, the pitch rises and the note becomes much clearer; it may, indeed, become evident for the first time. If next it passes over a superficial cavity the note takes on a clear, sweet, musical character, which is never simulated by any other condition. This use of the fork in determining the outlines of solid organs is not new, but its application to the diagnosis of cavities is of interest and should be valuable.

Cardiopulmonary Respiration.—BINETTI (*Gazz. d. ospedali*, No. 13, 1905; *Deutsch. med. Wochenschr.*, No. 7).—The phenomenon may be described as follows: When the patient holds his breath, his mouth being open, air is expelled from his mouth synchronously with the heart beats. These expiratory noises can sometimes be heard nearly two feet from the oral orifice. The phenomenon occurs when, owing to some obstruction in the pulmonary circulation, the right heart hypertrophies. Other portions of the lung then receive an excessive amount of blood, as a result of which air is expelled from their alveoli with every systole.

Perforation of the Duodenum.—TUFFIER, ROUTIER (*Gaz. des Hop.*, No. 35, 1905).—In a recent meeting of the Société de Chirurgie of Paris (March 22, 1905), a very interesting discussion of duodenal perforation took place. M. Tuffier discussed a case of M. de Rouville. The patient was a young man, twenty-two years old, who was suddenly attacked by violent epigastric pain and vomiting. The pulse was 160, the temperature normal. The point of greatest pain was in the right iliac fossa. A diagnosis of appendicitis, with diffuse peritonitis, was made and an immediate operation done. An incision over the region of the appendix was followed by the escape of considerable pus, and in view of the grave condition of the patient nothing further was done except to provide for drainage. The patient succumbed twenty-six hours later. At the autopsy the appendix was seen to be normal, but a triangular perforation was found in the duodenum at the center of an indurated ulcer. The patient had never presented any symptom indicative of intestinal disease. M. Tuffier went on to say that this error in diagnosis was quite excusable. There have hitherto been reported twenty-three cases of laparotomy for duodenal ulcer. In these twenty-three cases all previous history pointing to ulcer has been absent in nine cases, and has been unmistakably positive in only nine. In all of the cases there was a diffuse peritonitis, the initial pain, however, being absent in eighteen. Often the pain was diffuse, affecting the entire abdomen. In fifteen cases everything pointed to the diagnosis of appendicitis, and in six

more the diagnosis was doubtful. It is thus clear that the differential diagnosis between appendicitis and duodenal perforation is difficult.

M. Routier reported a case just the opposite of that of M. de Rouville. The patient was a young girl who had had gastric trouble, and in whom her physician had made the diagnosis of duodenal ulcer. She had had several severe attacks of pain and was referred to M. Routier for operation. A laparotomy showed the condition to be one of appendicitis and was followed by recovery.

In the discussion M. Faure called attention to the great value of the racic pain in the differential diagnosis between appendicitis and duodenal perforation.

The Widal Test for Typhoid.—AASER (*Berl. klin. Wochenschr.*, No. 10, 1905); SEHRWALD (*Deutsch. med. Wochenschr.*, No. 7, 1905).—Aaser recommends the use of a culture medium, consisting merely of peptone, salt and glucose, for the cultivation of typhoid bacilli to be used in the agglutination test. In this medium the so-called pseudoagglutination does not take place, and the test thus gains in trustworthiness even in the hands of the inexpert. The culture may be made sterile by means of the addition of 1 per cent. formol or carbolic acid, without affecting the delicacy of the reaction.

Schwald's recommendation is in a way just the reverse of the above. If typhoid bacilli are grown on a medium offering rather a low amount of nourishment, such as potato, the bacilli grow in long chains, with comparatively feeble mobility. An emulsion of such a culture agglutinates very readily, and a dilute serum that ordinarily shows complete clumping, only after the lapse of hours will produce a positive reaction with such a culture in half an hour, or less. The test is thereby made to consume much less time, but it is questionable whether what it gains in rapidity it does not lose in reliability. Its chief use will be when the test is done macroscopically.

Concerning Fluctuation.—RECLUS (*Gaz. des Hop.*, No. 37, 78th year, 1905).—The term fluctuation is one of the vaguest in medicine. Reclus finds himself able to define it only as follows: "The word fluctuation is applied indiscriminately to each of the different sensations which reveal to the fingers of the surgeon the presence of a collection of fluid in the tissues." In a delightfully written article he discusses briefly each of the different phenomena which have been grouped together under this common term.

1. The condition to which the word fluctuation would apply most literally, is seen only where the fluid is confined in a flabby cavity too large for it. If one portion of the mass be struck, waves can be seen to undulate over the entire area. This phenomenon is found chiefly in ascites, and in certain thin-walled abscesses.

2. The second variety gives the sensation of shock to the one hand when the fluid is tapped sharply with the other, and is also characteristic of ascites.

3. Another sensation may be called return-shock (*choc en retour*). This is felt chiefly when the cavity containing the liquid lies upon a bone or other unyielding base. When struck with the finger the fluid yields, but

the wave-impulse traveling backwards is reflected from the bony surface and returning gives the striking finger a return-tap. Retropharyngeal abscesses give this phenomenon most typically.

4. A fourth variety is characterized by a sensation of withdrawal (*sensation de fuite*). This is found chiefly in cavities of the thorax and abdomen, and in multiple communicating phlegmons of the limbs. When such an abscess is pressed upon by the fingers it promptly empties itself, the pus or other fluid escaping through the communicating channels into the other cavities.

5. A fifth variety is found in certain abscess of the breast and gives the sensation of a perforated wall (*paroi trepanee*). When the finger of the examiner presses upon the abscess, the latter disappears and the finger comes upon a round opening with unyielding walls. The pus has been forced through this opening into the breast itself. If now the breast be taken in the other hand and squeezed, the fluid returns and pushes the examining finger outward.

6. The sixth variety is the one most frequently met in practice. One finger of each hand is placed upon the same tumefaction. When one finger is pressed inwards, the fluid yields there, but presses outwards under the other finger, raising it perceptibly. In fluid collections that are accessible in nearly their entire contour, such as certain hemarthroses or hydrarthroses of the knee, cysts of the spermatic cord or of the epididymis or fluid in the tunica vaginalis, a modification of this method is useful. The sack is compressed at one end by the forefinger and thumb of one hand and at the other end by finger and thumb of the other. When squeezed by the first hand it bulges out between the other, and *vice versa*.

It must be admitted, however, that not only do collections of pus or other fluid fail often to give fluctuation, but we may often get typical fluctuation (the false fluctuation of lipomata, soft sarcomata, etc.), where there actually is no fluid at all. Reclus believes that this false fluctuation can in no manner be distinguished from true fluctuation, and that the judgment of the examiner, based upon other data, must in each case come to his assistance in making a diagnosis.

THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

Roentgen Rays in the Treatment of Leukaemia.—DOCK (*Am Med.*, December 24, 1904, p. 1083) has made a study of twenty-nine cases of leukaemia treated by the x-rays, reported in the literature, the details of which are sufficiently well given to make them available for study. His own cases have not been observed for such a period that he feels justified in presenting them. His conclusions are best stated in his own words:

“Under treatment with Roentgen rays some cases of leukaemia un-

dergo marked changes for the better. The leucocytes fall to normal numbers and sometimes show no more pathologic cells. The red blood corpuscles improve, the enlarged spleen and lymphatic glands resume normal proportions, the general health seems restored. In some cases the effects are imperfect.

In no case has observation been carried out long enough to speak of cure. In several cases death has occurred while the symptoms seemed to indicate improvement. The mode of action of the Roentgen rays is not known. It probably consists in affecting the tissues that produce the pathologic leucocytes, either directly or more probably through the production or setting free of substances that affect cell formation, or degeneration, or chemotaxis, or all these processes; but further investigation is necessary. At present the improvement must be considered functional and not affecting the original cause, nor in a permanent way the histology of the disease. The improvement of the red blood cells may be due to general stimulation of nutrition, in which suggestion may have a part, or by diminution of lymphoid or myeloid tissue, and thus permitting development of red cells, as suggested by Ahrens.

Though the change seems a functional one, it is possible that treatment in very early stages may be more effective than it has hitherto been.

Roentgen ray treatment of leukaemia is dangerous on account of the usual risk of dermatitis and burns, but probably also on account of toxic processes as yet impossible to explain. No stronger claims can be made for it than can be made for arsenic and certain serums and bacterial toxic substances. But it may prove more certain in its action than arsenic and can be more readily applied in practice than the injection methods. Careful observation and recording of all cases in which the treatment was followed promise advances in our knowledge of leukaemia, with the possibility of gains in practical therapeutics.

No special rules can be laid down at present for treatment with Roentgen rays. Great care should be taken to avoid burns. Methods should be described as fully as possible in each case. The blood should be carefully examined as fully and as frequently as possible, and if possible, urine examinations should be made to throw additional light on metabolic changes."

The Treatment of Leukaemia by Roentgen Rays.—MEYER & EISENREICH (*Muench. Med. Wochenschr.*, January 24, 1905, p. 153) report two cases of spleno-medullary leukaemia, in one of which the number of leucocytes was reduced from 165,000 to 6,100 in a period of three and a half months after 582 minutes of treatment, myelocytes disappearing completely from the blood. In the second case the leucocytes fell from 420,000 to 149,000 in two and a half months after 536 minutes' total exposure, myelocytes persisting, though not in so large proportion as at the beginning of treatment. Marked improvement occurred in both cases in the general health, as seen in the disappearance of fever, the gain in body weight, and an increase in hæmoglobin and in the number of red blood corpuscles. Both patients were able to return to work. The spleen in the first case was greatly reduced in size, but in the second case was not affected. The latter case, however, devel-

oped pains in the splenic area which strongly suggested the formation of infarcts in the spleen.

Further Contributions to the Treatment of Leukaemia by the Roentgen Rays.—SCHIEFFER (*Munch. Med. Wochenschr.*, January 24, 1905, p. 159) reports the results of treatment in five cases of speno-medullary leukaemia, two of recent origin and three of long standing. The two recent cases responded most rapidly and completely. Two of the older cases responded slowly, and improved chiefly subjectively. One of the three older cases failed to improve, and eventually died.

Leukaemia—The Ultimate Failure of the Roentgen Rays as a Therapeutic Agent.—BROWN and JACK (*Ill. Am. Med. Assoc.*, March 25, 1905, p. 956) report a case of spleno-myelogenous leukaemia which died in their care after a period of observation of sixteen months. After ten months the leucocytes had fallen from 800,000 to 8,000, and the myelocytes had completely disappeared. The patient had regained the appearance of robust health and returned to work, "riding his bicycle back and forth from work." This satisfactory condition was maintained without treatment for four months, when the patient returned complaining of weakness and pain in the back. The leucocytes had increased to 50,000. A month later fever developed, a toxic and finally a typhoid condition set in, in which the patient died. The leucocytes reached a maximum of 78,000, but in the last month (during the toxic state) rapidly diminished to 5,000, at which point they remained.

Autopsy findings, in which unfortunately the bone marrow was not examined, showed that all characteristic leukaemic lesions had disappeared from the organs which were examined. The kidneys showed a remarkable calcification of the convoluted tubules.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

About the Virulence and the Immunizing Effects of Typhoid Bacilli.—A. PETTERSON (*Central. f. Bacteriol.*, Vol. 38, No. 1).—Wassermann had shown that typhoid bacilli behave differently from the organism of cholera, in as much as their virulence has nothing to do with their power to produce immune substances, but determines only the degree of immunity to be obtained. Petterson made investigations in this line, and found that a diluted immune serum, containing 133 immunizing units was deprived of only 69–83 immunizing units by the introduction of different races of the typhoid bacillus. The virulence of these races differed immensely (tenfold). This proves that virulent typhoid bacilli are not to be differentiated from avirulent ones by a higher avidity to the specific immune substance. In regard to the production of the latter in the animal body, it must be said that the avirulent races and even one

virulent race did not produce an immune serum. This would certainly mean that the production of the immune body does not stand in distinct proportion to the capacity of the bacteria of absorbing the substance. While with the vibrio of Asiatic cholera, even minute quantities will give rise to the formation of an immense quantity of immune body, this does not obtain for the typhoid bacilli. The immunizing effects of the latter is reduced by exposing them to a higher temperature. Immunization is, therefore, dependent upon a thermolabile substance. But the capacity for absorbing immune bodies is not decreased by heating the bacilli, and Petterson concludes, from this that the production of immune bodies is not a work of the bacterial receptors, but that of a thermolabile substance.

Laboratory Diagnosis of Variola.—B. L. THOMPSON (*The Journal of the American Medical Association*, 1905, No. 16).—The quick method of Henke and Zeller of imbedding in paraffin in a few hours pieces of tissue by means of acetone as a fixing and hardening agent (referred to by us in this JOURNAL, 1905, March, p. 288) has been used by Thompson for a rapid diagnosis of variola lesions, that at times may be necessary or desirable. As, after the method, a histologic diagnosis may be made in about three hours, it will prove of great value in doubtful cases. It is to be recommended that the author lays the emphasis on the recognition of the specific histologic lesions of variola; two other laboratory methods almost simultaneously published, one of American origin, the other announced in Germany by Juergens, consider more the characteristic cell-inclusions as a means of diagnosis. The latter resorts to corneal inoculation and the finding of the inclusions in them. As even in the earliest stages of the variola lesion the histologic changes are, as far as our present knowledge goes, absolutely characteristic and specific for it, the application of the acetone method by Thompson will make it a quick means to arrive rapidly at a reliable diagnosis.

Structure of Vaccine Bodies in Isolated Cells.—JAMES EWING (*American Medicine*, 1905, March 25).—In the attempt to obviate the great difficulties encountered in retaining vaccine bodies for investigation in unaltered shape and appearance, Ewing has succeeded in adding very important information to our knowledge of these formations. The method used by him (and a method, as the reviewer can confirm by personal experience, easily applied and not surrounded by intricacies or difficulties) is the following: With vaccine or variola material in rabbits or other animals corneal ulcers are produced. After varying periods these ulcers are lightly touched with a clean slide or coverglass, thus producing on the latter an impression of the ulcer, consisting of the cells of the loosened corneal epithelium. By successively touching the ulcer a number of times, a series of impressions can be obtained, practically removing the whole of the ulcer. The specimens are dried at the ordinary room temperature, and then treated like blood specimens. The Giemsa method is the one most to be recommended (application of the solution for only five to ten minutes.) In such specimens it can be distinctly shown that the vaccine bodies are continuous with the cyto-reticulum, very often, too, with the nuclear reticulum. The bodies which in fixed

and stained tissues invariably are surrounded by a clear zone of greater or smaller thickness, do not show this after this method, proving this clear area to be an artefact. Gradual changes in the staining reaction of these bodies can be studied, as well as the appearance they give when isolated from degenerating cells and lying free in the serous fluid. There is nothing in the pictures obtained after this method in the least suggesting a parasitic character; if there are parasites present in the bodies they have not been discovered and must lie within the meshes of the reticulum. Ewing's work does finally away with the parasite nature of the cytoryctes.

Further Contributions to the Theory of Histologic Fixation.—W. BERG (*Arch. f. Mikrosk. Anat.*, Vol. 65, Heft. 2) is of the opinion that the method of Fischer, to judge from the action of fixatives on highly diluted solutions of proteids, is not correct as far as the fixation of protoplasm is concerned. The substance to be tested must, on the contrary, be in a condition more resembling that of protoplasm; it must be gelatinous and besides must form the main bulk of a simple test specimen of histologic character. He selected for this purpose the heads of the spermatazoa of the salmon, that to about 96 per cent. consist of a compound of nucleinic acid and protamin. Varying the conditions of his experiments as much as possible he studied the action of the different fixatives used in histologic methods on this substance. In regard to the fixatives, he comes to the conclusion that they exert a double effect on the substance, vacuolization and rigidity with insolubility in water. As to vacuolization, there obtains an analogy to the behavior of a solution; it means, in other words, a change in structure and has to be used as a guide for estimating the degree of the artefacts produced. The effect of the second reaction is the insolubility of the substance, that it has acquired when brought in contact with water. The degree and the rapidity in which this change is brought about gives an estimate of the value of a fixative. The two effects do not depend upon each other; osmic acid, for instance, hardly produces any vacuolization, while it very quickly brings the material to a pronounced state of rigidity. The author himself suggests that even from objects like those examined by him as yet no general conclusions can be drawn as the conditions may vary greatly even in substances very similar to them.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

The Fate of Parts of Ovarian Tumors, Left After Ovariectomy.—SCHROEDER (*Zeitschr. f. Geb. u. Gyn.*, Vol. liv, part 1).—The author gives in this article the interesting histories of three ovarian tumors. In the first patient a pseudo-mucin kystoma was removed by laparotomy. A very exact microscopic examination positively established the benign nature

of the tumor. Three years and a half later the abdomen had to be reopened and general carcinosis of the peritoneum was found. The writer believes that in this case at the time of the first laparotomy small particles of the benign new growth were disseminated in the peritoneal cavity, which later underwent a malignant degeneration.

In the second patient laparotomy was performed, but on account of dense adhesions it was impossible to remove the tumor, which proved to be a cystadenoma of the ovary. The wall of the cyst was sewed into the abdominal wound and the cyst opened. A fistula formed which remained patent for several years in spite of several attempts to close it. At times fecal matter and gas was expelled through the opening. Another laparotomy was performed. But again the tumor proved inoperable, and therefore nothing could be done except an attempt made to extirpate the whole canal, which lead down into the pelvis. Through drainage was established from the lower angle of the laparotomy wound into the vagina. One year and a half later the abdominal fistula finally closed. A year later it opened again, disappeared later. Seven years and a half after the first operation the vaginal fistula is still secreting, and in the place of the abdominal fistula a hernia has developed. The tumor itself does not show any symptoms of malignant degeneration.

The third case belongs to the group of the rather rare "secondary formation" of a tumor. A dermoid cyst which obstructed the expulsion of the fetus during labor was pushed up into the abdominal cavity. It ruptured and its contents gave rise to the formation of a new tumor. A little more than a year after the confinement the patient returned to the hospital. A tumor of the size of the fist is felt to the right above the pelvic brim. Another immovable tumor can be felt under the left costal arch. Laparotomy was performed. The pelvic tumor was found to be a dermoid cyst of the right ovary. The mass under the left costal arch was fixed to the abdominal wall and removed only with great difficulty. This tumor was made up of fatty sebaceous matter pervaded by granulation tissue which contained a very large number of giant cells.

Eclampsia Toxines.—DIENST (*Centralbl. f. Gyn.* No. 12, 1905) advances in this interesting article a new eclampsia theory. He suggests that eclampsia results from the transgression of fetal blood into the maternal blood on account of a leakage in the placenta. His theory is based upon the assumption which of late is decidedly gaining in favor, that fetal blood is heterogen to the maternal: that is, acts upon maternal blood like the blood of another species. By injecting fluid into the shed placenta of eclampsia patients through the umbilical arteries he could demonstrate that in the majority of the cases the integrity of the placental covering was disturbed. In a similar way he injected methylene blue into the still adherent placenta immediately after the expulsion of the fetus, and succeeded in certain cases in sending the methylene blue into the maternal system, from which it was then eliminated through the kidneys. Dienst's experiments and deductions probably do not settle the vexed problem of the etiology of eclampsia, but they must undeniably be regarded as a most interesting addition to the various eclampsia hypotheses which are based upon the "lateral chain theory" of Ehrlich.

On the Use of Caustics.—R. CHROBAK (*Wiener klin. Wchn.*, No. 11, 1905).—The writer warns against the indiscriminate use of vaporization of the uterus. The effect is not even, and a too deep escharotic effect with subsequent cicatrization of the uterine cavity cannot be positively avoided. He acknowledges, however, the advantages of vaporization in checking uterine hemorrhages in cases of hemophilia.

Chemical caustics should never be used in too concentrated form, because a thick eschar has decided advantages. He uses nitric acid, formalin, tincture of iodine, crude acetum pyrolignosum, preferably applied with the intrauterine applicator covered with a thin layer of cotton. The application should not be repeated before the old eschar has sloughed away.

Paresis of Facialis and Hypoglossus After Spontaneous Delivery.—STEIN (*Centralbl. f. Gyn.*, No. 11, 1905).—A case of this kind is described by the writer. The baby was born by a primipara after a labor of more than twenty-three hours. A swelling of doughy consistence was found over the left mastoid process, which was taken to be a small hematoma. The paresis of the facial nerve disappeared within eight days—that of the hypoglossus a few days later. The author assumes that there was besides an extracranial also an intracranial hematoma on the base of the brain, very small so that only the hypoglossus became involved. A similar case is quoted from literature, but no explanation offered for the cause of this hematoma.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

Relation of School Methods to School Diseases.—At the 1903 meeting of the American Medical Association, Herdman and McBride were appointed a committee to determine the relation of school methods to the production of neuroses, psychoneuroses and other "school diseases." This committee has now presented its report (*Jour. A. M. A.*, April 15, 1905). After discussing the question in detail the following conclusions are reached:

"In the opinion of your committee the American Medical Association should place itself on record as advocating and urging the inauguration of a thorough and systematic medical inspection of public schools and school children in every section of the country.

"1. In the interests of public health, since it is a potent means for detecting and preventing the spread of contagious and infectious diseases.

"2. For the purpose of securing to the child, while in attendance on school, the most favorable hygienic and sanitary conditions.

"3. For the purpose of getting exact knowledge regarding the physical and mental capacities of each child, in order that the methods of instruction may be intelligently directed to meet individual needs."

Dissemination of Streptococci Through Invisible Sputum in Relation to Scarlet Fever.—HAMILTON (*Jour. A. M. A.*, April 8, 1905), attempting to prove whether or not scarlet fever patients actually disseminate streptococci into the surrounding air, sterile petri dishes were filled with rabbit's blood agar and were used to catch the invisible droplets of sputum expelled from the mouths of scarlet fever patients when coughing or crying, or when breathing heavily with the mouth open. Fifty cases were thus tested, cultures being made from the tonsils at the same time. These tonsil cultures showed streptococci in forty-seven out of fifty cases. The plates showed streptococci in sixty-six per cent. of the cases tested. It seems fair to assume that a strain of streptococcus, which is virulent for one human being is virulent for others also. The author, therefore, concludes that there is a real danger from such dissemination of streptococci from scarlet fever cases. She, therefore, urges that scarlet cases having streptococcal complications be separated from cases without such complications, that in hospitals where such isolation is impossible, gauze masks be used to cover the patients' mouths.

Melæna as a Sign of Intussusception in Infants.—VERNON (*These de Paris*, 1904).—*Rev. Mens. des Mal. De l'Enf.*, February, 1905, says that melæna is a sign of the first importance in the diagnosis of acute intussusception in infants, being found in over ninety per cent. of the cases. It is one of the earliest signs, showing itself ordinarily a few hours after the accident. Among a series of sanguinolent stools there appears one stool of pure blood. Such a stool is of the greatest diagnostic significance. The melæna is usually accompanied by vomiting and by abdominal pain. These signs rarely fail. On the other hand the sausage-like tumor and tympanites can often not be detected until a much later stage of the affection. In the first year of life a stool of pure blood, especially if rather large, may be considered almost pathognomonic of intussusception. Inasmuch as this sign usually comes on very early, it permits of an early diagnosis, and thus of early surgical intervention.

Acute Arthritis in the Newly Born.—HUTAN (*These de Paris, Rev. Mens.*, March, 1905), says that acute arthritis of the newly born may be due to several causes, of which the most common is gonorrhœal blennorrhagia. Several joints are affected simultaneously, as a rule, in the gonorrhœal cases. The joints may suppurate, and general infection then ensue. Such infection is nearly always due primarily to the gonococcus, though the ordinary pyogenic organisms may cause secondary infection. Other causes of acute arthritis may be erysipelas, osteomyelitis, or infection with the pneumococcus. Acute articular rheumatism is not absolutely unknown. It is also possible that certain of these acute forms of arthritis in the newly born may be due to generalized infection as a result of scarlet, typhoid, or variola. The cases belonging in this category, however, must be rare.

Influenza in Childhood.—SPIEGELBERG (*Kinderarzt XIV.*, 9, *Archiv. f. Kinderheilk.*, 41, p. 138), gives a critical resume of the literature of the last fifteen or twenty years. The influenza bacillus has been found in nearly all organs in childhood. Early infancy would appear to possess

a relative immunity, but no age is absolutely immune. In early childhood the gastro-intestinal symptoms are most marked, thereafter the nervous symptoms. The incubation period is short (one to eight days). The onset is usually sudden, with the child apparently perfectly well. Diffuse redness of the pharynx is one of the most characteristic symptoms. The fever is not typical; it may go to 104° or over. Frontal and parietal headache, weariness, exhaustion, pains through the whole body, especially in the neck, shoulders and knees, are all usually present. The pulse is rapid, small, and often arrhythmic. Cardiac weakness is often noted. On the part of the respiratory system, there is a descending infectious catarrh, the bronchitis being ordinarily dry. Bronchopneumonia is common, but typical influenza pneumonia is very rare in childhood. The manifestations on the part of the respiratory system are usually not particularly malignant. Opinions differ as to the constancy of enlargement of the spleen. The kidneys are sometimes affected. Earache and otitis media are common, so, too, severe conjunctivitis. Special nervous symptoms, often noted, are: Headache, pressure over the eyes, hyperæsthesia along the spinal column, vertigo, delirium and stupor. Meningeal irritation and completely developed meningitis are common. The latter is, however, usually secondary. Hemorrhagic encephalitis is described. Tetany is noted as a frequent sequela. Psychoses may develop. Neuralgia and vesical atony are frequent. Various exanthems are described.

The course varies from three days to about three weeks. Relapses are rarer in childhood than in adult life, and the general prognosis of influenza better.

ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

Trans-pelvic Lines for Determining Displacement at the Hip.—STEWART L. M'CURDY, M. D., Pittsburg, (*Amer. Jour. Ortho. Surg.*, April, 1904).—There is no condition in surgery that causes more anxiety than injuries and diseases about the hip joint where there is a question as to the diagnosis. Nelaton's line is inaccurate in the most skillful hands, depending as it does on holding a tape line between the anterior superior spine and the tuberosity of the ischium; two observers may find a difference of an inch in the position of the trochanteric eminence. Bryant's triangle has fallen into disuse and is not mentioned in some of the modern surgeries. M'Curdy proposes a line, this line passes through the spines of the pubic bones at right angles to the median line, the umbilicus serving as the vertical of the triangles. This line passes outward across the hip joints, and passes over the trochanteric eminences when the heads of the femora are in the acetabula, no fracture of the neck or displacement existing. Where displacement exists it may be measured by taking the distance on a perpendicular erected to intersect the anterior superior spine on the affected side from this transpelvic line. This method may be applied to skiagrams.

Sacro-Iliac Disease in a Young Child.—A. THORNDIKE, Boston. (*Amer. Jour. Ortho. Surgery*, April, 1905).—This affection is comparatively rare in babies and young children, they do not possess an immunity against sacro-iliac disease however as the case reported shows. A boy at the age of sixteen months fell from a rocking chair striking his left side, he had no trouble for a month, then an abscess formed and pointed just to the left of the anus, this discharged off and on for three months; the child then presented the appearance of a tumor in the abdomen, diagnosis was doubtful between sarcoma of the left kidney or a large abscess confined by the fascia of the iliacus muscle. Operation was decided upon and a large abscess cavity was opened which had developed in the iliac fossa retroperitoneally, with complete destruction of the joint and separation of sequestra. The great tolerance of little children for destructive osteitis in this region is illustrated as the boy made good recovery after drainage was established. Sacro-iliac disease in young children may accompany or coincide with caries of the lumbar spine.

On the Means of lengthening, in the Lower Limbs, the Muscles and Tissues which are Shortened through Deformity.—PROF. DR. A. CODIVILLA, Bologna, Italy. (*Amer. Jour. Ortho. Surg.*, April, 1905).—As things stand at present, we trust to empiric measures to overcome the contraction of the muscles, whereas we should use mathematical precision. The treatment by the surgeon is determined rather by habit than by the exigencies required in the individual case, the operator has recourse to plaster apparatus or to continued traction according to his opinion as to which of these usual methods is best. Where we have an old fracture of the femur healed with deformity, an osteotomy done for coxa-vara, dislocation after typhoid, a pseudo-arthritis of the upper third of the leg with displacement of fragments, in fact any injury of the lower extremity which necessitates strong traction in order to get a good result. We realize here that traction applied to the muscles is apt to lose its efficiency, and that the amount is limited as the patient cannot stand enough, also that if it is applied in sufficiency the soft parts are very apt to break down and slough away. The author of this paper is of the opinion that this force should be applied to the skeleton, that the soft tissues and skin should be excluded from the danger of necrosis from pressure. To obtain this direct transmission of force to the bones themselves, he drives a large nail through the back part of the heel, which by means of two lateral ferrules, fixed in a plaster bandage, holds the foot distracted to the proper degree. No necrosis, pain or inconvenience arises from this nail, he has applied it to 26 cases with lengthening of from 3 to 8 cm. The nail staid in place 3 to 5 weeks.

The Treatment of Congenital Dislocation of the Hip by Axillary Abduction.—ROBERT WERNDORFF, Vienna (*Zeit. f. Orth. Chir.*, Band xiii, Heft 4).—In a certain number of the cases submitted to the Lorenz operation relaxation takes place upward and forward from the fixation position of right angle abduction. Where these hips have slipped out at least twice the author recommends that they be put into a position of the most extreme abduction, the knee comes into the axilla and the trunk and thigh are inclosed in a plaster dressing. He has used this method

of fixation on eight cases, four are still in their casts, the other four are favorable results.

Therapy of Flat-Foot.—ANTONELLI, Pavia (*Zeit. f. Ortho. Chir.*, Band xiii, Heft 4).—The technic of an operative procedure for the cure of static flat-foot is here described. Since muscular activity is the most, in fact, the prime factor in maintaining the plantar arches, the object should be to strengthen up these arches, to increase the activity of the supinators and to lessen that of the pronators. This may be done by carrying the tendon of the extensor proprius hallucis under the plantar arches and there fastening it, by making the tendon achilles longer and the tibialis posticus shorter, also by lengthening the peroneus and transferring the second toe long extensor to the great toe.

The Recurrence of Torticollis After Operation.—A. SCHANZ, Dresden (*Zeit. f. Orth. Chir.*, Band xiii, Heft 4).—When there is recurrence after an operation for torticollis the unsatisfactory result is the result of one of two conditions, either the shortened muscle was not thoroughly divided, or the process after the operation has resulted in band formation. Provided our operation is thorough we must depend on some form of support to hold the head corrected so that these bands will be long enough to achieve our aim. The author describes a thick cotton bandage, this gives an elastic pressure to the neck and efficiently extends it, is more comfortable than plaster.

Report of the Present Condition of the Cases Operated Upon for Congenital Dislocation of the Hip.—CHARDES DWIGHT NAPIER, M. D., Brooklyn (*Brooklyn Med. Jour.*, April 1905).—This report covers the present condition of the cases operated upon by Prof. Lorenz at the Kings County Hospital, Brooklyn. A summary of the result is as follows:

(1) Posterior dislocation, result anterior dislocation; (2) posterior dislocation, result anatomical cure; (3) posterior dislocation, result anatomical cure; (4) posterior dislocation, result fracture, failure; (5) posterior dislocation, result probably anterior dislocation; (6) anterior dislocation, result anatomical cure; (7) anterior dislocation, result anterior dislocation.

Anatomical cures, 43 per cent.; improved, 28 per cent.; failures, 28 per cent.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

Family Spastic Paralysis Associated with Amyotrophy.—HOLMES (*Rev., Neurology and Psychiatry*, April, 1905).—Two cases are described of this rare affection. These are cases of a progressive family disease affecting at least two members of the same family. It seems justifiable to group

such cases into a definite class of which the family affection, the onset in early life and the tendency to slow progression of the symptoms are the distinguishing features.

Bilateral Sympathectomy for the Relief of Epilepsy, with Report of Three Cases.—SPRATLING PARK (*Journal of Nervous and Mental Disease*, April, 1905).—This paper is chiefly of interest because it contains the first report of the microscopic study of the ganglia removed. The changes found in the removed sympathetic nerves are as follows: Pigmentation of a greater or less number of nerve cells of the cervical ganglia in all three cases. Presence in every one of the three cases of at least one nerve cell with double nucleus in some one of the extirpated ganglia. In one of the cases about a half dozen of such cells were found. Degenerative changes in the modulated nerve fibres in the sympathetic cord and ganglia of the excised portion. In one case a focus of inflammation of perivascular round-cell infiltration.

General Paralysis Due to Tuberculosis.—KLIPPEL (*Rev. Neurologique*, April 15, 1905).—This contribution aims to show that dementia paralytica can result from various disturbances in the brain produced by various causes and that tuberculosis is one of these. Tuberculosis showing itself as a dementia paralytica can follow any of these causes, tubercular encephalitis, degenerative encephalitis and infectious encephalitis. A case is described to illustrate the author's contention. The case is clinically one of dementia paralytica. At the post mortem evidence of tubercular disease of the cortex of the cerebrum and also more advanced degenerative changes of a tubercular nature in the brain were clearly demonstrable. The author is convinced that this case is a further proof of the possible aetiological factor of tuberculosis in dementia paralytica. From this fact there follows the statement that the condition itself is not to be regarded as a disease *sui generis* but as following a variety of processes affecting the cortex and the rest of the cerebral substance.

The Pathology of Friedreich's Ataxia.—RAINY (*Review of Neurology and Psychiatry*, April, 1905).—This paper gives the pathological data derived from an examination of two cases of Friedreich's ataxia. A careful clinical description of the cases are given as well as an outline of the literature. The following conclusions are in part given as the result of the study. 1. A typical case of this disease of long standing may show no changes in the brain or cerebellum. 2. The appearance of the diseased tracts in the posterior and the lateral columns of the cord are sufficiently similar to incline one to the belief that in both they are the consequences of the same pathological cause. 3. The nervous elements are themselves primarily involved and the increase of interstitial tissue is secondary. 4. The cause of the disappearance of the nerve fibrils is a matter of conjecture. 5. The degenerated nerve structures in the cord are replaced by neurological elements.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

The Treatment of Pyelitis.—KELLY (*Med. Record*, April 8, 1905).—After discussing the causation of pyelitis and quoting interesting cases, the author lays great stress upon its magnitude, and sums up his paper in these words:

1. It is important to take cognizance of a pyelitis of any grade whatever, as it may at any time become a menace to functional value of the kidney, or even to life itself.

2. The severer grades of the affection are often the sequelæ of a milder pyelitis of long standing.

3. The first step in the investigation is to determine the extent of the affection by eliminating the amount of pus in the urine and the relative number of organisms,

4. It is important to determine the cause of the infection, which is often of a mechanical nature, and therefore easily relieved.

5. By removing the cause, the disease may either be cured, or so far benefited that a subsequent complete relief by means of local treatments is easily brought about.

6. The milder forms are best treated by rest, abundant water and urotropin.

7. If there is not a speedy improvement, the next simplest plan of treatment is the catheterization of the kidney every two or four days for the purpose of evacuation, distension of the pelvis, irrigation, and instillation. Boric acid and nitrate of silver are the best drugs in this connection.

8. Improvement should be measured by the disappearance of pus from the urine and the diminution in the organisms, taking say three platinum loops as a measure in conveying the infected urine to the agar.

9. A patient improved, but not cured (complete absence of bacteria), should be watched in the intervals of treatment, and guarded with especial care in case of any intercurrent disease. Should such a disease supervene, urotropin is a good prophylactic.

10. The severer forms of the disease may be treated by irrigation, which often brings great temporary relief. As a rule, however, the kidney must be opened and drained; if it has been extensively diseased, it should be removed.

A New Method for the Detection of Calculi in the Ureter and Kidney.—CABOT (*Amer. Jour. Urol.*, March, 1905).—To the phonendoscope the author has attached a ureteral catheter.

Running through its whole length, fitting loosely, is a whalebone bougie, or a wire. The former is not easily obtained the right length, so he is now using the latter. It should be at least thirty inches long. This wire protrudes at the distal end of the catheter and on to it is se-

curely fastened a metal tip or head. This should be blunt, the size of the usual blunt catheter tip. It is firmly soldered in place.

We thus have a good conductor of sound. The wire in the catheter lumen is protected from moisture and pressure as well as contact with the metal of the cystoscope. The proximal extremity of the catheter and wire are firmly secured to a metal holder which is arranged to screw into the diaphragm of the phonendoscope, which is connected in the usual way with the ears. The slightest sounds are carried from the point of contact to the ears. The least contact of the metal end with a stone can be heard with great distinctness and the presence of a calculus thus determined.

In operations on the kidney we frequently wish to determine the condition of the ureter and whether or not it be obstructed. By the use of this instrument we can determine this point and also can decide by the sound whether the obstruction is caused by a calculus having lodged there.

The Cause of Incontinence as a Sequel of Prostatectomy.—RUGGLES (*Ann. Surg.* April 1, 1905).—Of thirty-nine cases of prostatectomy done at Rochester, 3, or 7.2-3 per cent. had as a sequel incontinence of urine. Ruggles considers the different theories that have been promulgated to explain this result, such as injury to the vesical neck, or prostatic urethra, or both, and injury to the nerve supply of the vesical sphincters. According to him the internal vesical sphincter is in health quite weak, and as soon as three or four ounces of urine have collected in the bladder, it relaxes, and permits the urine to pass down, filling the posterior urethra, until it meets the resistances of the external sphincter. The function of the vesical or internal sphincter is then at an end until after the next act of urination. So that to explain incontinence after prostatectomy satisfactorily we must look to paralysis, partial or complete, of the external sphincter. The author, therefore, suggests that if perineal prostatectomy is performed, the incision into the urethra should be as close to the prostate as possible, exactly on the median raphe of the compressor urethræ; and the utmost care be exercised to avoid stretching and laceration of the muscles.

Prostatism Without Enlargement of the Prostate.—CHETWOOD (*Ann. Surg.*, April, 1905).—From an experience of thirty-six cases, Chetwood finds that contracture of the neck of the bladder is a common cause for vesical obstruction; its relief is safe and sure by his method of galvano-prostatotomy through a perineal opening; and it is often an explanation for what has been termed "Prostatism without Enlargement of the Prostate."

Lavage in the Treatment of Diseases of the Kidneys.—JOHNSON (*Amer. Jour. Urol.*, February, 1905) —In a number of cases where oxaluria or lithæmia was the causative element in the production of symptoms complained of by the patients presenting themselves for treatment, marked improvement followed the first lavage. In pyelitis and parenchymatous nephritis, lavage produces startling results. Those local remedies appearing to yield the best results are solutions of silver nitrate, protargol,

nargol, or other of the silver salts in a warm saturated solution of boracic acid as a vehicle. Twenty-two illustrative cases are reported and these conclusions seem justified:

1. Internal medication alone is not sufficient in treating many diseases of the kidney.

2. Lavage of the kidneys can be earnestly recommended as a safe and efficient adjuvant.

3. Many stubborn cases of lithæmia quickly yield to this measure.

4. In severe types of inflammatory lesion of the kidneys alleviation is always possible and complete cure may be accomplished.

5. Fluids employed in lavage should be of proper temperature and injected slowly in small quantities. The strength should gradually be increased.

6. Every precaution demanded in a major operation should be carefully observed in this manipulation.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

The Principles of the Treatment of Maxillary Sinus Disease.—GERBER (*Archiv fuer Laryngologie und Rhinologie*, Band 17, Heft 1).—The fact that there are constantly new methods being advocated for the treatment of diseased conditions of the maxillary sinus shows that an ideal treatment has not been found. Gerber discusses the various methods which are at present employed, pointing out their shortcomings. At the conclusion of his article he lays down the following principles:

1. The first principle is always to open the antrum, when possible, at the point nearest its natural communication with the nose, and to avoid any permanent opening with the mouth or pharynx.

2. Recent and mild cases should be irrigated through a canula which has punctured the antral wall in the middle meatus.

3. In cases of long standing, and in which there is a thick, creamy pus with a foul odor, a large communication should be made between the nose and the antrum in the middle meatus. This opening may extend down as far as the inferior meatus if it is found necessary.

4. In very old and obstinate cases a large opening should be made into the antrum in the fossa canina. After the antrum has been thoroughly inspected and cleared of its contents a large communication should be made between it and the nose in the middle meatus. The opening in the canine fossa should be immediately closed and the after-treatment carried out through the nose.

5. Exceptions to these rules are only made when, through unusual nasal deformities, the after-treatment cannot be carried out through the nose.

Postoperative Nasal Hemorrhage; Calcium Chloride; Secondary Anemia; Rapid Recovery.—WILSON (*American Medicine*, March 18, 1905,) reports a case of severe nasal hemorrhage following the removal of a portion of the middle turbinate and a small spur under cocaine and adrenaline chloride by means of the snare and saw. Four days after the operation a profuse hemorrhage occurred, following gymnastic exercise. This hemorrhage resisted the ordinary treatment, and continued for six days. The patient was then given forty grains of calcium chloride once daily by mouth, and the hemorrhage gradually ceased. The author wishes to emphasize the importance of giving calcium chloride in large doses, either by mouth or rectum, coincidentally with surgical methods for controlling hemorrhage. He ascribes the successful issue in the case reported to this drug.

On the Treatment of Acute Coryza.—HENLE (*Deutsche Medicinische Wochenschrift*, February 9, 1905).—Finding great relief at the onset of a severe cold in the head from the application of Bier's constriction to the neck in his own case, the author applied the same in five other cases. He found that a pressure of from 50 to 60 mm., as recommended by Bier in other portions of the body, could not be borne about the neck, but found that 25 mm. was sufficient to produce the desired result. In his own case all subjective symptoms were greatly relieved after the bandage had been applied for one hour. After an interval of an hour the bandage was again applied and allowed to remain three hours, when it was again removed with complete relief. The same results were obtained in four other cases. In another case the treatment failed owing to the presence of a chronic hypertrophic rhinitis, and that the bandage was not allowed to remain a sufficient length of time. In no instance was there any discomfort from the bandage.

The Value of the Present Quantitative Tests for Hearing, with the Demonstration of a New Apparatus.—BRYANT (*Medical Record*, April 1, 1905).—After discussing the various methods and contrivances used in testing the hearing, and pointing out their many disadvantages, the author briefly describes his phonographic accoumeter. This instrument consists of a phonograph so constructed that the amount of sound reaching the patient can be accurately gauged and at the same time be under control of the expert. Bryant believes that it provides a standard for the comparison of tests equal to those used by ophthalmologists. He summarizes his paper as follows: The methods at present in use do not give adequate tests for the perception of the human voice, nor do they give results which can be compared. My phonographic accoumeter does all of these things and more. It overcomes the chief difficulties and inaccuracies formerly accompanying quantitative hearing tests. It gives a satisfaction and accuracy not hitherto attained. It furnishes a test with the human voice which does not vary and can be multiplied and repeated indefinitely. Unilateral or bilateral tests can be applied without doubt or error. Eyesight aids are eliminated. It furnishes a sure way of detecting all feigned deafness short of total bilateral deafness, and it is an ideal machine for furnishing acoustic exercise, which has been recommended in the treatment of deafness.

On the Cause and Treatment of Serious Hemorrhages Following Tonsillotomies.—HEUKING (*Archiv fuer Laryngologie und Rhinologie*, Band 17, Heft 1).—After briefly reviewing the causes usually given for serious hemorrhage following tonsillotomies, the author reports in detail six cases in which he found the hemorrhage had its origin in each instance in a wound on the posterior pharyngeal pillar (arcus palato pharyngeus). The author believes these findings throw a new light on the etiology of a large number of severe hemorrhages following the removal of tonsils. Heuking accounts for the frequent wounding of the posterior pharyngeal pillar in that during the act of gagging a contraction of the palato-pharyngeal muscle occurs, throwing the tonsil with the pillar forward; thus a portion of the pillar is easily caught in the tonsillotome. He believes that this accident is not nearly so apt to occur when the knife or scissors are employed, as every act of the operator is done under direct control of the eye, which is often not the case when the tonsillotome is employed. After the hemorrhage is once established the author claims that too often much valuable time is lost in applying styptics, when by simply making digital compression at the site of the wound the bleeding can be promptly and effectively controlled. In only one of his cases was it necessary to continue the compression longer than an hour; the others ceased promptly in from ten to forty minutes.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

MARTIN F. ENGMAN, M. D.

Preliminary Communication Regarding an Immune Body Capable of Inhibiting the Development of Cancer in Mice (adeno-carcinoma), JENSEN—G. H. A. CLOWES (*Johns Hopkins Hospital Bulletin*, No. 169).—This communication deals with one phase of an investigation which is being carried out at the present time by the author and Dr. H. R. Gaylord. A considerable number of authentic cases of recovery from cancer in human beings are recorded in literature, but no attempts have apparently been made to test the effects exerted by serum of such recovered cases upon tumors of like nature in other individuals. The writer has not, up to the present time, been able to procure human cases of a type suitable for experiments of this nature, but the possession of a series of readily transplanted mice tumors, some of which recovered spontaneously, has afforded an opportunity of making some preliminary investigations. Small, rapidly growing tumors in mice seemed to be affected by the influence of this serum, while the larger tumors, weighing from three to four grams, were not appreciably affected, but the cachexia from which the mice suffered was in all cases alleviated. The tumors in the control mice were unaffected, and developed in the usual manner, leading eventually to death. A serum from mice cured of their tumors by the above treatment was found to possess a certain degree of activity, but it did not contain the activity exhibited by the serum obtained from mice in which the tumors had spontaneously disappeared. Microscopical study of the tumors undergoing retrogression was exceedingly in-

teresting. The point of these experimental investigations upon which the author laid special stress was the evidence afforded by the experiments of the existence of immune forces antagonistic to the development of cancer.

Treatment of Scalp Ringworm.—T. COLCOTT FOX (*London Practitioner*, April, 1905).—Removal of the hair over the whole head is recommended, the hair to be clipped short to the length of about one-half inch. Each diseased area should be carefully marked out by analine, pencil or iodine solution, and these areas should never be lost sight of in the process of treatment. Washing the head is recommended only when absolutely necessary, as it is not a curative procedure. To the healthy surface should be applied some mild innocuous parasiticide, such as carbolized vaseline. Depilation is a great assistance, but very difficult to carry out properly. Applications recommended by the author are as follows: An ointment which sets up a desirable degree of inflammation without pus formation is the following:

℞ Cupri oleatis	3i to v
Olei amygdal	3i to iii
Adeps lana	3i
M. ft. ung.	
℞ Hydrarg. oleatis absolute	3ii to iiss
Adeps lana	3iss to ii
Acidi oleici ad	3i
M. ft. ung.	

These ointments can be progressively increased in strength, and more and more vigorously applied until the desired effect is produced.

Nervous Asthma and Maladies of the Skin.—A. BAYET (*Annals de Derm. et de Syph.*, March, 1905).—In this work the author essays to establish the relationship existing between asthma and cutaneous affections. He arrives at the following conclusions: In certain cases there seems to be a direct balance immediately between the two affections. In other cases the disappearance of the eruption markedly affects the crises of the asthma. In others, the periods of eruption are accompanied by aggravation of the respiratory symptoms.

Syphilitic Vegetations Developing Upon an Eczema.—M. DANLOS (*Annals de Derm. et de Syph.*, March, 1905).—A particularly interesting thing about this report is the histologic study of the point of lesion. 1. There was found considerable hypertrophy of the epidermis. 2. Between the prolongations of the epidermis there was formed along the veins an abundant cellular exudate. The epidermis presented all of the characteristics of proliferation to the point of vascular abscess formation. The infiltration about the veins consisted of lymphoid cells.

Syphilis Nodulare Hypodermique.—J. DARIER and CIVATTE (*Ann. de Derm. et de Syph.*, March, 1905).—In the course of the manifestations of intense secondary syphilis, generally of a grave nature, there often occur subcutaneous nodules which are usually situated about the subcutaneous veins, the structure of the nodules being that of a syphiloid, and is a secondary benign thrombo-phlebitis. *Restitutio ad integrum* is obtained from mercurial treatment.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

The Question of Iridectomy in Glaucoma Simplex.—F. E. CHENEY (*Ophthalmology*, April, 1905).—In an attempt to determine the proper procedure in any given case of glaucoma simplex, Cheney would have us pay attention to the following points:

(1) Tension. This is relative; what would be increased tension for one eye may be normal tension for another. The evidence from palpation should be supplemented by a knowledge of the effect of the intraocular pressure upon the optic nerve head. A glaucomatous excavation should be taken as sufficient evidence of a supranormal degree of intraocular pressure for that particular eye.

(2) It should not be forgotten that, without operation, an eye may retain good vision indefinitely, whereas blindness may quickly follow as the result of an iridectomy.

(3) Operation may be advisable in a comparatively young individual with a reasonably long expectation of life, and inadvisable, under similar ocular conditions, in an older patient who may escape blindness by death. Attention should be paid to the family longevity.

(4) Temperament. Certain individuals will accept with resignation the gradual diminution of vision as among the many unrelievable burdens of life. Others will be made quite wretched by the knowledge of the probable outcome of their disease, and would prefer to risk the chance of immediate blindness by operation with the possibility of staying the disease.

(5) In an elderly patient with one eye blind from glaucoma, Cheney advises against operation on the fellow unless the course of the disease has been unusually rapid in the first (blind) eye.

On Peritomy for Diffuse Corneitis and Other Affections of the Cornea.—S. SNELL (*Ophthalmology*, April, 1905).—A rather large experience with this operation has impressed Snell with its positive utility, more especially in diffuse corneitis and in the salmon-colored corneal opacity of trachoma. He has never seen any ill effects in any of his operated cases which now number over two hundred. The operation is performed as follows: Beginning above, the conjunctiva is severed all around at a distance of from two to three m. m. from the corneal margin. The portion remaining adherent to the cornea is dissected up and removed with scissors.

Other conditions in which this treatment has proved of value are chronic ulcer of the cornea, superficial spreading ulcer in old people, detachment of the corneal epithelium and relapsing iritis.

Superheated Hot Air Baths in Ophthalmic Practice.—OSTWALT (*Ann. d'Oculist*, March, 1905).—Ostwalt has designed an apparatus to which he has given the name "Thermærophore," for the purpose of directing upon the eye or other portion of the head a stream of superheated hot air without danger of inducing cerebral congestion.

A metal cylinder encloses a spiral tube, below which is a Bunsen gas jet. By means of a rubber bulb cold air is forced into the tube, where it is heated and makes its exit into a "basket" covered with non-inflammable cloth. The rim of the basket is made to conform to the contour of the face surrounding the eye. The basket contains a thermometer, and is strapped to the head by a metallic band.

The degree of heat and the rapidity of rise in temperature can be regulated by the frequency of compression of the bulb, which is operated by the patient. The ocular globe can bear from 150 C. to 175 C. on account of the abundant secretion and rapid evaporation of the tears. The skin of the lids is more sensitive and will burn at lower temperatures, so that the patient must keep the eye wide open during the treatment.

Sittings, of thirty minutes' duration, are given daily. After twenty minutes the flame is extinguished, and slowly cooling air is projected upon the eye for ten minutes. The eye is found very much injected, and is protected by a bandage for half an hour.

Note on the Action of Antipyrin in Optic Atrophy.—VALUDE (*Ann. d'Oculist*, March, 1905).—Valude's experience has convinced him that the indications for the use of this drug in optic atrophy are well marked but sharply limited. He finds that it is efficacious only in descending atrophy consecutive to an acute infectious encephalic process.

Valude's formula is as follows:

Aquæ.....	50 grams
Antipyrin.....	25 grams
Cocain.....	0.25 grams

2 cc. of this solution is injected every other day into the dorso-lumbar region.

If there is no visual improvement after twenty-five injections, it is useless to persevere in the treatment.

Retinitis Punctata Albescens.—C. PASCHEFF (*Ophthalmic Review*, March, 1905).—The first to draw attention to this variety of retinitis was Mooren. The principal features of the disease are: (1), the distribution of several hundreds of white spots over the fundus of both eyes, principally about the region of the macula lutea and optic nerve; (2), concentric limitation of the fields of vision; (3), diminution of central vision, and (4), night blindness. The affection is generally found in young individuals and often in the several members of the same family. Consanguinity, according to Gayet and Fuchs, is the etiologic movement. In Pascheff's case, the papillo-macular and temporal regions of the retina contained several hundred small separate white spots lying in the deeper layers of the retina. Some of the spots were round with sharply outlined borders, others were oval with faintly indefinite margins. They were independent of the blood-vessels which passed over them and were quite normal. Central vision was normal; there was some concentric contraction of the fields of vision. The interesting feature of the case was the fact that the child had hereditary syphilis. Under mercurial treatment for one and one-half months the night blindness almost disappeared, many of the spots lost their brilliancy and sharp outline and the visual fields in ordinary light became almost normal.

A congenital atrophic process of the pigmented retinal epithelium is held responsible.

SOCIETY PROCEEDINGS.

ST. LOUIS SURGICAL CLUB.

Meeting of April 12, 1905.

Dr. Francis Reder in the chair.

FUNCTIONAL DIAGNOSIS OF KIDNEY DISEASES.

Dr. Wm. M. Robertson read a paper with the above title, for which see page 396.

DISCUSSION.

Dr. Wm. S. Deutsch said the findings had been verified at the operation and the patient was making a very nice recovery. At one time Israel was one of the most bitter opponents of the Casper method, but from a conversation with Professor Israel Dr. Deutsch believed Professor Israel was using this method in his kidney work. This patient said he had been operated upon for appendicitis and that was really all he knew about it, so that the diagnosis Dr. Robertson had made helped more than anything else in establishing facts.

Dr. W. C. G. Kirchner felt that laboratory examinations were of particular value because in operations on the kidneys it was essential to know which kidney was affected. He had seen several cases where it was of particular value that the diagnosis had been made before hand and the affected kidney differentiated. He had recently, in a post mortem, found the kidney in the pelvis. The renal artery was given off just above the bifurcation of the iliaes. The other kidney was in its normal position. This pointed out the necessity for a careful examination in all kidney diseases and the catheterization of the ureters in doubtful cases.

Dr. M. B. Clopton felt that it was unfortunate that as a method it was not dependent upon any particular findings, but entirely upon the comparison of the secretion of the one kidney with its fellow. It was never a simple matter to catheterize the ureters and would always be a procedure with some danger attached, but as it was the only method of obtaining the urine satisfactorily enough to permit the use of cryoscopy, it seems to be a question that should be weighed pretty carefully before going ahead with ureteral catheterization. The method had its limitations and it should be only a means of last resort. The finding of horseshoe kidney, single kidneys, etc., were very rare occurrences and something not at all likely to be encountered.

Dr. Deutsch said that in early years sepsis may have had much to do with results, but the mortality was greatly reduced after the introduction of ureteral catheterization. It should not be a dangerous procedure if carried out by competent men.

Dr. Charles H. Dixon said, in regard to the carrying of infection up into the ureters, if the work was done by one accustomed to it, with the care he should take, there was no reason why infection should occur.

Dr. John C. Morfit thought ureteral catheterization might have been excluded in this case for the urine from one kidney was coming through the abdominal fistula. Ureteral catheterization should be avoided when it was possible to make a diagnosis without it. The freezing tests showed the comparative quantity of solids in the urine, but the same thing would be shown by the specific gravity, so far as the practical value in this case was concerned, could he not have told as much by the ordinary chemical and microscopical examination?

Dr. John M. Grant said that two years ago a patient had been turned down by an insurance company for some kidney trouble and had consulted him. An examination showed a little albumin, and he had intended making a more thorough examination later, but in the meantime a friend had sent the patient to a prominent specialist who

catheterized the ureters and as a result of that catheterization the man was very sick for three months.

Dr. Robertson, in closing, stated that Casper catheterized both ureters, with no bad results. Nitze catheterized only the one on the suspected side. In most instances it was possible to get results good enough for practical use by catheterizing one ureter and collecting the other urine from the bladder, but there was the question, whether any urine, with the ureteral catheter in place, would escape into the bladder. Nitze, in a recent article, described an instrument which he claimed absolutely prevented the coming down of any urine. In regard to the case presented, he did not think the diagnosis could have been made in any other way. The urine from the fistula had a specific gravity of 1006, while that of the bladder was 1022, and he was passing daily about two ounces more from the fistula. There was a little trace of albumin in both. There were granulations about the edges of the wound, with bleeding and pus, but it could not be told whether the pus came from the kidney or from the sinus. There was no history further than that he had been operated upon for appendicitis and had this sinus left. The speaker had never seen a case where this method had been used and it indicated disease on one side, that, when the case came to operation, it was not proved correct. He had seen cases where this method of diagnosis had failed to show disease of the kidney, still it was believed to be there, operation done and no disease found. This method of examination showed the comparative work of the two kidneys, and when a man had to operate on the kidney he must be familiar not only with the pathological lesions, but also the functional power of the kidney. Clinical, chemical and microscopical examinations should be made and in addition this method would give great assistance.

BOOK REVIEWS.

THE SURGERY OF DISEASES OF THE APPENDIX VERMIFORMIS AND THEIR COMPLICATIONS. By WM. HENRY BATTLE and EDU'D. M. COINER. W. T. Keener & Co. 1905. Chicago.

Since the literature on this subject has become so very abundant it is impossible for one who has not access to a large library to really get a good grasp of the subject. These men have made it their special aim to write from the standpoint of practical surgery, and to construe chiefly from the large material that is constantly passing through their hands. They have introduced sections on acute abdominal diseases, carcinoma, tubercle and other diseases of the appendix and life insurance.

DIE DIREKTE BESICHTIGUNG DER SPEISERÖHRE. Oesophagoskopie ein Lehrbuch fuer den Praktiker. Von Prof. Dr. HUGO STARCK, mit drei Farbigen Tafeln und Zwanzig Abbildungen. Wuerzburg: A. Stuber's Verlag (C. Kabelzsch). 1905.

The value of a work of this kind along a field which is so little trodden in our country, at least, becomes apparent when we take into consideration that the advance made in medicine during the last half century was almost wholly toward improvement in technique. At the rate we have progressed in the recent past, it seems only reasonable to think that we shall soon thoroughly and satisfactorily explore all of the body cavities which have a means of communication with the external world. Examination of the esophagus has long since become a routine practice of value in many of the European clinics. For more than twenty years experiments along this line have been carried on, and it is hoped that the use of the esophagoscope will soon become a common thing in this country, as is the ophthalmoscope or the laryngoscope to-day. The volume at hand will do something toward bringing about this result, since it details the experiences of a man who examines more than one hundred patients a year in this way.

DIET IN HEALTH AND DISEASE. By JULIUS FRIEDENWALD, M. D., and JOHN RUHRAEH, M. D. Published by W. B. Saunders & Co., Philadelphia. 1905.

The purpose of this volume is well expressed by the authors, namely: that it has been prepared to meet the needs of the interne and medical student, as well as for a reference book for the general practitioner and for nurses' training schools. While the greater part is devoted to the diet in special diseases, it contains an adequate description of the physiological basis and the principles of diet, and of the various classes of foods. Perhaps its point of greatest merit is the importance which it gives to the definite knowledge of food values which it places at the disposal of the reader, and the recognition which it gives to the importance of a knowledge of the physiology of nutrition. Of particular value is the section on infant feeding. The work is practical throughout, but at the same time based upon a broad knowledge of the literature of the subject.

GALL STONES AND THEIR SURGICAL TREATMENT. By B. G. A. MOYNIHAN, M. S. (Lond.), Senior Assistant Surgeon to Leeds General Infirmary, England. Octavo volume of 386 pages; illustrated with text cuts, some in colors, and nine colored inserted plates. Philadelphia, New York, London. W. B. Saunders & Co. 1904. Cloth, \$4.00, net.

Mr. Moynihan's very extensive work, together with Mayo Robson, fits him for the work at hand. Every phase of gall stone disease is dealt with, and various features are illustrated by the histories of selected cases, and many rare, unique conditions being shown in consequence of the material at hand being so large. The illustrations are

unusually fine. The paper bears the print and binding of that most desired in books. This monograph of 386 pages is up to any similar work in the English language. It is hoped that such a volume will lead to gall stone surgery being instituted at an earlier period of the disease than is now generally the case.

REGIONAL MINOR SURGERY. By GEORGE GRAY VAN SCHIACK, Consulting Surgeon to French Hospital, New York. Second edition, enlarged and revised. 228 pages, bound in cloth, profusely illustrated; price, \$1.50. International Journal of Surgery Co., New York.

The fact that this little book appears in the second edition is a guarantee that it has proven satisfactory. It describes the treatment of those conditions that are met with every day by the general practitioner, and thus saves wading through a lot of material in which he has no interest. The busy man will appreciate the advantage of having placed in his hands just what he needs in the way of minor surgery without going into details of what the man with a well equipped hospital is alone able to carry into effect.

A COMPEND OF THE DISEASES OF THE EYE AND REFRACTION, INCLUDING TREATMENT AND SURGERY. By GEORGE M. GOULD, A. M., M. D., and WALTER L. PYLE, A. M., M. D. 3d edition, revised and corrected. 109 illustrations, several of which are in colors. Philadelphia: P. Blakiston's Son & Company, 1012 Walnut street. Price, \$1.00 net. 1904.

It is rather surprising to the reviewer to find that a sense of justice compels him to commend a quiz-compend. In explanation it may be stated that the reason this little work merits particular praise, lies in the fact that it does not resemble, either in plan or purpose, the ordinary publication of this sort.

There are certain omissions which we are rather surprised to find in a work prepared by such progressive ophthalmologists as Drs. Gould and Pyle, and for their benefit in preparing the inevitable fourth edition, we would say that the description on page 76 of the connection between convergent strabismus and hyperopia, does not at all represent the attitude of present ophthalmic opinion. On page 84, the removal of the lens in high myopia, now a recognized ophthalmic operative procedure, is damned with faint praise. On page 153, in discussing the treatment of epithelioma of the lid, nothing is said of that therapeutic means which has practically displaced all others, namely, the x-ray. Neither do we find (p. 160) in the paragraph devoted to the treatment of purulent dacryocystitis anything about extirpation of the lacrimal sac. In the category of excellences we may mention the useful table on page 26, which gives at a glance the relation between the obsolete inch system of numbering lenses and the present dioptric system.

A LABORATORY MANUAL OF HUMAN ANATOMY. By LEWELLYS F. BARKER, M. B. Tor., Professor of Anatomy in University of Chicago and Rush Medical College. J. B. Lippincott Company, Philadelphia.

This manual is written with the hope that it may occupy the position between the manual that gives the student too much, the "spoon feeding" guide, and the guides that do not give him enough, the author has been brought to the realization of the fact that many students need some sort of laboratory guide or manual in order to become independent workers. Laboratory instructors also need such a book, a book that will be safe in the hands of a student who has not had the advantage of previous training in laboratory methods. One that will not keep him from referring to descriptive text-books and atlases on anatomy, but, on the contrary, will stimulate him with the desire so to do. The nomenclature used is that which was formulated by the German Society of Anatomists, and which is rapidly being adopted in the best English and American laboratories. There are three hundred illustrations of which a special index is given. The book is printed well and the character of the plates is similar to that found in the large anatomical atlases.

INTERSTATE MEDICAL JOURNAL.

VOL. XII.

JUNE, 1905.

No. 6.

ORIGINAL ARTICLES.

ACTINOMYCOSIS.

By J. A. MATLACK, M. D., Galesburg, Illinois.

Preliminary to a general review of the subject of actinomycosis, I wish to briefly refer to a case which I recently saw in conjunction with Dr. Percy, and which will serve to illustrate many of the features of this interesting disease.

Mrs. A., aged thirty-two, a farmer's wife, presented herself for treatment four months ago for multiple abscesses of the chest wall. These abscesses had existed for about three months, gradually growing larger, and discharging a thin, whitish pus. She had consulted several physicians, who had diagnosed and treated the case as one of ordinary pus infection, but her condition had gradually grown worse under such treatment. Her general health had not suffered greatly, but she had a persistent cough, with profuse expectoration, which had existed for a month previous to the appearance of the abscesses. She also complained of a constant dull pain in the right side.

Examination of the chest showed five or six red, angry-looking swellings from one to two inches in diameter, extending in a line at the level of the seventh and eighth ribs posteriorly on the right side, discharging thin pus through numerous small openings resembling somewhat the breaking down of a carbuncle, the little apertures being fringed about with outgrowths of peculiar bluish, soft granulation tissue. The pus contained numerous grayish granules about the size of a pinhead. Physical examination of the chest showed signs of pleuritic effusion, extending as high as the fifth rib posteriorly on the right side, with coarse rales over the middle portion of the lung. The patient's general appearance indicated rather poor health.

The sputum was light colored and watery, and was filled with granules similar in appearance to those found in the pus. Microscopic examination of these granules from both pus and sputum showed them to be colonies of ray fungi.

The fact that the pulmonary symptoms appeared a month prior to the development of the abscesses makes out a clear case of actinomycosis primarily affecting the lung, thence extending to the pleura and finally penetrating the chest wall.

No clew as to the source of infection could be obtained from the patient's history. The disease known as "lumpy jaw" did not exist among the animals on her farm or in the immediate neighborhood.

According to the recorded experience of writers on this subject, actinomycosis involving the lung and pleura is practically without hope of recovery, hence in this case our prognosis was unfavorable. The manifest fact that there was considerable involvement of the lung made surgical intervention inadvisable, so we decided on purely medical treatment. The patient was placed on small doses of potassium iodide, rapidly increasing the dosage from day to day. She showed at once a remarkable tolerance to the drug, and also began to show improvement after a very few days of treatment. In accordance with our usual practice, we then referred the patient to her home physician, and were fortunate in having her come under the care of Dr. H. S. Zimmerman, of Cameron, who has taken a lively and intelligent interest in the case, and has carried on the potassium iodide treatment with very gratifying results. The dosage of the drug has at times been carried above two ounces per diem. Dr. Zimmerman's reports on the case have indicated a gradual but steady improvement. The cough has disappeared, the abscesses are healed with the exception of one small opening, and the patient's general condition is quite good. The only physical abnormality to be noted is an area of relative dullness over the site of the former pleuritic exudate.

From present indications it would seem quite probable that this patient will entirely recover, but it is possible that there may be areas of infected and broken down tissue which will remain impenetrable to the action of the drug. In such case the remaining pus and detritus may be removable by surgical methods. The difficulties of operating for such a disease in this portion of the body will be at once apparent.

It is only within the last generation that actinomycosis has been recognized in man; yet it has no doubt existed from time immemorial, and it seems strange that a condition so characteristic and so easily identified should have been so long without definite classification. The disease has been observed in nearly all parts of the world, but it has been only within the last few years that many cases have been reported in this country. It might seem from the increasing number of cases reported that the disease is on the increase, but it is more probable that a knowledge of its characteristics is becoming more widespread among physicians, hence its recognition is more frequent.

Etiology.—There is no form of disease that affords the diagnostician more satisfaction than does actinomycosis, because when once suspected its existence can be proved or disproved with mathematical exactness. If the disease be actinomycosis there is invariably present in the lesion the micro-organism known as the streptothrix actinomyces or "ray fungus." It appears, macroscopically, either in pus, granulations or

neerotic tissue as small granules, easily visible to the naked eye, and quite characteristic in appearance. The larger granules are yellowish in color, and the smaller granules, representing younger colonies of the organism, are gray. If one of the granules be placed on a glass slide and flattened out by the application of a cover glass, it will appear under a magnification of 500 diameters in the characteristic "ray" formation. Three zones will be evident in the circle—a central granular zone, a middle zone of interlacing and radiating threads and an outer zone of club-shaped terminations of these threads. For more certain identification of the fungus it is well to stain it by Gram's method, which decolorizes other fungi which might be confused with it. With this method the branching threads are stained a bright blue. The club-shaped ends do not take on the blue stain, but they may be counterstained with picrocarmine. Gram's method also applies when staining the colonies in tissues.

Mode of Infection.—For the purposes of this paper the possibility of direct transmission of the disease from cattle to man need only to be mentioned in passing. A few cases have been reported where such direct transmission has seemed probable, but in all such instances it has been observed that the infected person lived under the same conditions as did the animal, exposed to the same general possibilities of infection.

The valuable researches of Hectoen along this line have proven that man, as well as beast, is subject to direct infection through the agency of cereals and the dried stalks and husks of small grain. The ray fungus has a wide distribution, and has been repeatedly isolated from the air, water and soil, and particularly from infected vegetation. It has also been found in the oral cavity of healthy men and animals. The organism has been placed on dry sterile beards of grain, where it has developed and remained alive for months and years. It is therefore plain that the fungi are present in the common surroundings of mankind to as great an extent as are the bacteria of many of the more common diseases, and the fact that the disease itself is not more widespread must be explained by the assumption that either the normal human body is highly resistant to the infection, or that the germ of the disease is harmless unless it gains access to the tissues in some difficult and unusual manner.

Carious teeth have been considered convenient portals of entrance for the infection, but it is more probable that an associated softening of the gums is more directly concerned. Probably the most common mode of infection is through the agency of chaff and beards of cereals, which may be eaten or inhaled, and which may penetrate the mucous membranes or find lodgment in an abraded surface. If such particles are bearers of actinomyces colonies, as is often the case, an infection is likely to follow. Numerous instances have been reported in which the

actinomycotic lesion had in its center a foreign body of vegetable nature, covered by ray fungi.

Infection through the skin is uncommon, but it is possible for a wound or abrasion to admit the infection.

Ingestion of food bearing the fungus may result in infection of the gastro-intestinal tract, and cases have been reported as appearing in each of the abdominal viscera. Metastasis takes place usually through the blood.

Infection of the respiratory tract usually occurs through inhalation, but may spread directly from the jaw along the muscles of the neck; thence into pleura or lung.

Pathology.—The changes which this infection produce in the tissues of man consist essentially in the breaking down of normal structures, accompanied by a growth of characteristic indurated connective tissue and spongy granulations. This process results in the formation of abscesses and sinuses, and the production of pus containing the actinomyces colonies. Where the process presents externally there is at first the picture of an indolent abscess, with false fluctuation of the spongy tissue. Eventually the abscess breaks externally, usually through a number of small openings, after the manner of a carbuncle, and a mass of purplish granulations form about the openings. If left untreated the disease burroughs deeply, forming sinuses and affecting all tissues down to and including the bone.

On cross section the actinomycotic mass usually shows numerous small pus cavities walled off by dense tissue presenting a microscopic picture scarcely distinguishable from sarcoma.

In the lungs the post-mortem appearance is quite similar to that of fibroid phthisis, and, except for the granules in the pus, it may often be found difficult to detect a difference between the two diseases.

In the gastro-intestinal tract the mucous membrane may first become the seat of colonies of the fungus; later, small white nodules may be found in the submucous tissues; thence by extension the infection may reach the deeper organs, there to produce the usual phenomena of sclerosis, softening of the tissues and abscess formation.

Symptomatology.—The subjective symptoms naturally vary with the location and extent of the lesions, but it is a peculiarity of this disease that its local manifestations are proportionately much greater than are the complaints of the patient. In cases which are well advanced the general health of the patient suffers materially, but in the early stages the general condition is usually good, and very little pain is complained of.

In actinomycosis of the head and neck a swelling appears most commonly at the angle of the jaw, and tends to travel downward. Difficulty in moving the jaw is a significant complaint of the patient, due to the early involvement of the muscles. There is seldom any marked pain

in this region. In the past these lesions have often been mistaken for tuberculosis, syphilis or malignant disease. It may be differentiated from these several diseases by the fact that it is generally unilateral, there is no lymphatic involvement, the mild effect on the patient's general health, freedom from hereditary taint or significant history, and finally by the microscopic demonstration of the fungus.

The pulmonary form of the disease produces symptoms closely resembling those of phthisis pulmonalis. There is moderate pain, generally unilateral, cough and profuse expectoration, general wasting and moderate fever. The diagnosis must be made by microscopical examination of the sputum.

The abdominal form of the disease is seldom recognized specifically unless it points externally, or is revealed by surgical exploration. The symptoms are, in general, those of subacute inflammation of such organs or structures as may be involved in the infection.

Prognosis.—Where the disease is situated superficially, it can usually be cured by thorough removal of diseased tissue and subsequent careful medical treatment. Occasionally spontaneous recovery takes place. In deep-seated infection the outlook for recovery is unfavorable. In incurable cases the patient may live from one to three years.

Prophylaxis.—Although direct communication of the disease from an infected animal or man is doubtless rare, yet strict precaution should be taken to prevent the dissemination of infectious discharges, as indirect infection is quite possible. Animals having the disease in an incurable form should be killed. People living in the country should be educated as to the nature of the disease, and cautioned against the habit of chewing straw or raw grain.

Treatment.—The principles of treatment in this disease are very simple, and honors are equal between medicine and surgery. Potassium iodide has been found to have a marked inhibitory effect on the progress of the disease, and from the therapeutic tests it would seem that the ray fungi are destroyed by the drug whenever they are within reach of the body fluids. To be effective the iodide should be given in large doses and pushed to the limit of tolerance. A good plan of administration is to quickly reach the maximum dose which can be borne by the patient, and then give the drug intermittently, withdrawing it for two or three days to allow development of spores, then repeating the large doses for a few days, following up this plan until the disease is apparently eradicated. Even after the patient shows no further symptoms, the iodide should be administered a few days out of each month for several years. The surgical treatment consists in the thorough removal of all infected tissue.

LARYNGEAL DIPHTHERIA.

BY O. H. WILSON, M. D., Nashville, Tennessee.

The proof of the clinical and therapeutic identity of laryngeal diphtheria and membranous croup, is one of the brilliant results of modern bacteriological research, confirmed conclusively by sero-therapy. While we recognize that the laryngeal membrane may, in rare instances, be of traumatic origin, due to inhaled vapors or liquids, or may be the result of infection with some other bacteria, probably streptococcus, yet the clinical fact of a laryngeal membrane demands active antidiphtheritic treatment without waiting for a bacteriological diagnosis.

Pathology.—There is no material difference in the formation of the diphtheritic membrane in the larynx from that in other localities, except that after passing the vocal cords there begins the columnar ciliated epithelium characteristic of the air passages, and on this bed the membrane is formed more rapidly, with less epithelial destruction, is tougher and less adherent to the mucous membrane, though the process is essentially the same. Diphtheria in the larynx may be a simple catarrhal inflammation in which the Klebs-Loeffler bacillus may be demonstrated. Laryngeal diphtheria may be primary and localized, or involving the trachea and bronchial tubes also, or it may be secondary to pharyngeal and tonsillar involvement. I shall confine my remarks especially to localized laryngeal diphtheria, though in a general way they are applicable to the secondary form, except that in such cases we have also to deal with systemic toxemia. About one-sixth of all cases of diphtheria involve the larynx.

Symptoms.—At first we see the symptoms of simple laryngeal irritation, even less abrupt and less marked constitutional disturbance than in a simple inflammation. A harsh cough, a general hoarseness, stridor, temperature 99 or 100, pulse slightly accelerated; these being the symptoms marking any laryngeal irritation; but rapid progress is the characteristic feature of the diphtheritic process. In twelve or twenty-four hours vast changes have taken place; every symptom is exaggerated; the membrane is formed; the voice, hoarse at first, is now entirely lost, and dyspnea becomes prominent; the child sits up, leans forward, throws its head back, fights for air, every accessory muscle assisting in respiration. We see epigastric, suprasternal and intercostal depressions, the rise and fall of the larynx; the struggle for air is intense. Freeman reports a case in which the costal cartilage was separated from the rib, a hernia of the lung resulting. Respiration is not much increased—twenty to thirty, though the rhythm is disturbed. There is a prolonged whistling inspiration, an interval, then harsh and labored expiration, with incomplete emptying of the thorax which is shown by the depressed diaphragm.

There are spasms of coughing, when the otherwise pale skin gives place to lividity; there may be more or less cyanosis, especially in the finger tips, then after this great prostration with clammy sweat, the respiration becoming softer. The pulse is extremely weak and fast, temperature rarely higher than 100 until near the end, when it runs up to 105 or 106. The usual termination is in convulsions or stupor. These symptoms are not the resultant of diphtheritic toxine, but purely of the local obstructive process, causing exhaustion from the struggle, due to air, hunger and carbon dioxid poisoning. The striking feature is the rapidity of the case, especially in young children. The disease may run its course to a fatal termination in twenty-four hours, though usually it lasts from three to seven days. It is to be emphasized that these symptoms are paroxysmal, the spasms of coughing and intense dyspnea, followed by general relaxation and comparatively quiet breathing. Post-mortem findings may even demonstrate a decided air aperture in a larynx of a child dying with cyanosis, showing the spasmodic element in the laryngeal obstruction, and for this reason we can explain the rather exaggerated symptoms in neurotic and rachitic children, and in those under two years of age. Great improvement may follow the coughing up of the membranous cast of the larynx, though it usually rapidly reforms. A review of these symptoms will show little in common with those of ordinary pharyngeal diphtheria, and it is easy to appreciate the tardiness with which the profession accepted the demonstration of the identity of the two processes. In laryngeal diphtheria we have only the local symptoms, which are so rapid and so disastrous, that the systemic poisoning does not take place; besides, the laryngeal mucous membrane is not supplied with absorbents to the extent that the tonsils and pharynx are, hence we see a low temperature, no depression of toxemia, rarely albuminuria, paralysis, or nerve degeneration. The relative lack of contagion is explained by the short course and scanty secretion. The differentiation of these rare cases, due to trauma, or other bacilli than the Klebs-Loeffler, can only be determined by the course of the disease, or by bacteriologic examination, neither of which have we time to wait upon, as a few hours may mean the loss of the patient. Bacteriologic examination is, at best, unreliable. Fifty per cent. of the cultures are negative, and a negative result is never taken. The membrane resulting from streptococcus invasion is usually thinner and less dense, hence rarely gives severe symptoms.

Diagnosis.—This is usually easy. We must first determine that the dyspnea is laryngeal by excluding foreign body, retropharyngeal abscess and broncho-pneumonia; then we must decide between a simple and membranous inflammation, which is done by the severity, constancy and rapid progress, especially in young children.

Prognosis.—The prognosis has changed recently. In pre-antitoxine days it was regarded as almost necessarily fatal, 90 per cent. dying,

while in properly treated recent cases 20 per cent. mortality is about the average.

Treatment.—Remembering that laryngeal diphtheria is diphtheria, isolation must be insisted upon from the first, though it must be admitted that, on account of the small amount of secretion, the danger of contagion is a minimum. We must have an evenly heated room, temperature 70 to 72. The steam tent lessens the tendency to spasmodic laryngeal contractions. Calomel fumigations, ten grains every four hours, are landed by many, and may prove useful, especially in the rare class of cases due to streptococcus infection. There is danger of salivation to both patient and attendant, and should be done very gradually. Gargles, irrigations, sprays, etc., are practically useless. In fact, the medical treatment may be summed up in one word "antitoxine," given early and in large doses. Never mind about the bacteriological diagnosis; valuable time is thus lost. Don't wait on any pet theory as to the existence of streptococcus cases. Give antitoxine and arrest the progress of the membrane, so surely fatal if time is lost. The serum has been repeatedly demonstrated practically harmless, so it is not contraindicated in the small percentage of cases not due to the Klebs-Loeffler bacillus. Three thousand units should be the minimum dose if the clinical diagnosis is made; this to be repeated in six hours if no marked improvement. The innocuousness of the serum has been many times proven. MacCollom, of Boston, uses in every diphtheritic case 20,000 to 60,000 units. Emetics and depressants in general are contraindicated. Stimulants, strychnine and alcoholics, are useful, but not to the extent seen in pharyngeal diphtheria, where the depression is due to toxemia. Here it is simply the result of physical exertion to overcome a mechanical obstruction, and the best remedy is mechanical relief to this obstructed air passage. One of the greatest victories of antitoxine is the arrest of the growth of membrane, thus arresting obstructive symptoms, thus lessening the number of cases requiring operative interference. In recent days this has been diminished 50 per cent. by timely use of large doses of antitoxine, and the operative mortality has been greatly decreased. Many years ago attempts were made to relieve the distressing air-hunger of this disease, and for this purpose the operations of tracheotomy and intubation were devised, which lessened the mortality 10 per cent., though at first, due to imperfect technique, there was but little result, the mortality of the operative cases being 97 per cent., the operation being undertaken more to save the child the horrible suffering attendant upon slow suffocation. Before the antitoxine era many heated discussions with long array of statistics were brought forth by the advocates of the opposing operations to prove their superior merits. The Americans usually sustained the invention of their countryman, O'Dwyer, while the Europeans adhered to tracheotomy; but the best statistics either side could show were about 75 per cent. mortality. With

antitoxine these figures have been reversed; 75 per cent. are now saved. Since the introduction of antitoxine, American and, in fact, nearly all European authorities, with one accord, proclaim intubation the operation of election, though the conservatism of some eminent men is distressing. I quote the opinion of Graetzer, the editor of the *Centralblatt fuer Kinderheilkunde*, as expressed in the English translation just from the press: "As intubation calls for such skillful manipulation and constant medical attention, it is improbable that it will ever become popular. . . . It is doubtful if intubation will ever displace tracheotomy, which is often unconditionally preferable." Holt succinctly points out the superiority of intubation thus: "First, it is quicker, safer and adds no danger to the original disease. Second, there is no shock. Third, there is no anesthetic required. Fourth, there is no wound for infection. Fifth, there is no better opportunity for expulsive cough. Sixth, no parental objection. Seventh, air is admitted to the lungs, warm and cleansed. Eighth, no skillful after-treatment is required. Ninth, it is much superior in early infancy. Tenth, the tube can be dispensed with earlier than the tracheotomy cannula. Eleventh, if secondary tracheotomy is necessary, the tube can be used as a guide."

The two methods have been aptly compared to tapping the bladder and the use of the catheter. No one would hesitate as to choice, though the former might become necessary. While the mortality has been greatly reduced, intubation does no more than it always did—namely, mechanically relieves mechanical obstruction until the production of membrane has ceased, now cut short in its progress by antitoxine.

The time to operate is one point requiring the skillful judgment of the attendant. The aim of all treatment is to reduce the mechanical obstruction—that is, reduce the number of operative cases, but in no condition is a timely operation more valuable. Cyanosis is certainly no guide, as it frequently comes just before death, if at all. Dyspnea is a symptom calling for relief, and should determine the time for operative interference. Little or no harm is done by the skillful introduction of the tube, so don't delay too long. The following symptoms call for mechanical assistance: Evidence of necessary respiratory efforts, as shown by abdominal, thoracic and cervical muscles; weakened pulse with cold extremities; great depression, due to overexertion; rapidly rising temperature, indicative of systemic poisoning; great restlessness or coma. There is no time *not* to intubate. As long as there is life there is hope, and almost even longer; with antitoxine, hypodermoclysis and intubation, moribund cases are time and again saved. In about 3 per cent. of intubations the membrane is pushed downward by the introduction of the tube, which might cause a fatal issue, but if the tube is withdrawn at once, this is easily coughed up; if not, we must resort to immediate tracheotomy, so the operator must be prepared for this emergency.

O'Dwyer, Northrup, Caille, and other pioneers in intubation, always

contend that it is a very difficult operation, only possible in the hands of a few with special training. This, in my opinion, has been responsible for many deaths. O'Dwyer naturally felt that to insure the adoption of his method it was all-important to keep it in the hands of experts in the beginning, and so avoid the odium of failures due to inexperience. Following MacCollom, Jennings, and others of large experience, I must say it has always appeared an easy operation, and after a little practice on the cadaver, or an anesthetized dog, almost any one ought to be able to operate in an emergency, and as no force is required it ought not to do any harm. O'Dwyer attributes the bad sequelæ of intubation either to faulty technique or faulty instruments. He was loud in his warnings against the tube commonly in use, made by careless manufacturers. In this age of change it is noteworthy that no modification of his tube or instruments has found general favor with the profession, the ideal tube which his admirers claim as perfect, being the original set made by O'Dwyer. Only one modification of technique has found anything like general adoption; that is, the use of the horizontal position advocated by MacCollom, instead of the old sitting position. The merit of this is easily seen in cases of depressed heart action from toxemia or physical exhaustion.

The objects of this paper are:

1. To emphasize the importance of early mechanical relief, when mechanical obstruction threatens life. Do not delay until depression is marked. Remember that rapidity of progress is the characteristic feature of laryngeal diphtheria. You do not know what will happen before your next visit.

2. That while in no other operation does skill show to better advantage, intubation is not a difficult procedure, but can be learned easily by practice. An early operation, though possibly awkward, is better than waiting to give a moribund case to an imported consultant.

Moral: Don't wait; intubate.

MOVABLE KIDNEY, WITH A REPORT OF FIVE SUCCESSFUL NEPHRORRHAPHIES.

BY E. E. GELDER, M. D., Peoria, Ill.

The writer desires to report the following five cases of movable kidney. In all descriptions I shall maintain a strict adherence to the following classification of mobile kidneys: 1. Floating kidney. 2. Misplaced kidney. 3. Movable kidney.

By floating kidney is understood that congenital anomaly in which this organ is intraabdominal, being more or less completely surrounded by peritoneum, the layers of which pass backward along the vessels and ureter as a mesonephron.

Misplaced kidney is a rare, congenital anomaly of which most writers have made little or no mention. For this reason, and as I shall not have occasion to speak of it again, I will stop long enough to state briefly its characteristics. The organ in this case is firmly attached in some locality other than its normal one; and when so situated it takes the name of the part as pelvic kidney if it is in the pelvis. This does not mean a kidney which has migrated to the pelvis, but one of the kind reported by Henry Morris¹, who found at autopsy ten cases in which this organ was within the pelvis, the ureter being short and the renal artery coming off from the common iliac. Craigin² mentions six other reported cases: One by Hohl, one by Heuter, one by Fishel, one by Reunge, one by Albers and Schouberg, and one by himself. In his own case he did a vaginal nephrectomy, likely the only one on record. Gibbon³ also reports a case found at autopsy.

This brings us to our subject. When the kidney has no mesonephron, but still possesses an acquired mobility, it is designated as a movable kidney. This condition is of common interest to the general practitioner, the internist, the general surgeon, and the gynecic surgeon. Osler⁴ says that far too much stress has been laid upon the condition of late years, but an appeal must be taken from this statement. We can not watch too closely for any abnormality, and this is usually one of the last affections to enter a physician's mind when he seeks to explain many nervous and gastrointestinal symptoms presented to him. How often when an adult female patient complains of dragging pain in the abdomen, headache, and backache, does he tell her she is suffering from uterine or ovarian trouble, and confine his attempts toward remediation to these organs. Though extremes are also deplorable, still, when the patient's symptoms cannot be attributed to a discovered pathological lesion elsewhere, he should ascertain the location of the kidneys.

Etiology.—For this condition, first recognized by Rayer in 1841, there have been suggested a multiplicity of causes; but most all writers include the following as etiological factors. Forcing of the organ from its normal location by muscular contraction in coughing, straining, and heavy lifting; traumatism from external violence, rapidly repeated pregnancies; emaciation from wasting diseases; general relaxation of the abdominal walls with associated gastropptosis, enteropptosis, or both; increase in the size of the kidney from any cause; and tight lacing. Hirst⁵ also includes diastasis of the recti muscles, sudden evacuation of fluids from the abdomen, and an abnormal shape of the pouch the kidney rests in. Bacon⁶ includes unrepaired lacerations of the pelvic floor.

As you all know it is the right kidney which is usually displaced, and that it rarely occurs in men, yet it is not a condition peculiar to women who have borne children, one writer⁷ having found it more frequently in unmarried women.

Subjective Symptoms.—The following are the symptoms of most frequent

occurrence: A dull, dragging sensation, often painful, on the affected side, in the back and abdomen; a non-painful sensation of something moving in the abdomen; the detection by the patient of a 'lump' in the side; various gastrointestinal symptoms as indigestion, constipation, and a sense of fullness from gas; all degrees of nervous symptoms from simple headache to neurasthenia and hysteria; urinary symptoms may or may not be present—usually there are none; the patient's discomfort is exaggerated by the long continuance of any one position of the body, especially prolonged standing or walking. Hirst⁷ mentions a symptom which was present in two of the appended cases, *i. e.*: "She finds herself instinctively raising the right shoulder, or habitually keeping it higher than the left if the right kidney alone is displaced." Tyson⁸ also mentions a symptom which was given by another in her history, *i. e.*, an inability of the patient to lie with comfort on the left side when the right kidney is displaced.

That complex of subjective manifestations commonly known as Dietl's crisis is both a symptom and a result of mobility of the organ, being an accident which occurs with either a floating or a movable kidney. It is an extremely painful form of renal colic occasioned by twisting of the vessels and ureter when the organ is rotated on its horizontal axis. A sharp, sickening pain in the side, associated with the symptoms of shock, characterizes it.

Method of Examination.—When a knowledge of the location of a kidney is desired, the patient should be examined in more than one position. Many of these have been suggested, but only two will be described, as they give good results and are applicable to both office and house examinations. Have the patient remove all clothing from the abdomen and sit with her back and head supported and with her arms hanging freely by her sides. Instruct her to relax all her muscles and breathe easily through her mouth. The examiner places one hand over the renal region, the other over the abdomen, and with pressure upward and backward palpates for the kidney, it being his intention to determine the position and degree of mobility of it. When it can only be felt on deep inspiration of the patient, it is probably only a palpable and not a true movable kidney.

The other position is to have the patient stand with the body flexed at the pelvis, and with her hands on a chair about the level of her knees. She is instructed to support the chest and head entirely with her arms, to relax the muscles of her back and abdomen, and to breathe easily through her mouth. The examiner stands at the side and, as before, places one hand over the renal region and with the other palpates the abdomen.

Objective Symptoms.—These include the finding of a movable tumor in the abdomen, whose size is such that it would be reasonable to suppose it a kidney; dullness on percussion over the tumor, with an area of

tympany between it and the costal margin; tympany instead of dullness over the renal site; the tumor does not move with respiration, and the patient may complain of a sickening pain when deep pressure is made over it.

It might not be out of place at this time to note that the suprarenal gland does not follow the kidney down.

Differential Diagnosis.—The following case is illustrative of one of the important conditions to be considered under this head: While an interne in the Howard Hospital in Philadelphia I examined a woman brought in suffering from acute pain in the side. Abdominal palpation revealed a moderately sensitive tumor in the right hypochondrium which was distinctly movable; examination otherwise negative. Believing it to be a movable kidney, I ordered her prepared for operation the following morning. As was the custom before all anesthesia operations, I examined the urine the next morning, and found it contained a large quantity of bile. I again examined the patient, and found her jaundiced, but free from pain, and no tumor could be detected.

It is therefore easily understood why a distended gall-bladder is here mentioned first in a differential diagnosis. The range of mobility of the kidney is general, while a distended gall-bladder can only be moved around in a very small circle, and if pushed backward immediately springs up to the abdominal wall; it moves with respiration; no tympany can be elicited between it and the costal margin, and there would be dullness over the renal area if the kidney was in place. The presence of jaundice, bile in the urine or clay-colored stools would aid in the diagnosis. The examiner should not be satisfied with finding a distended gall-bladder, though, as it and a movable kidney are often associated, the former secondary to the latter.

If the tumor was an ovarian tumor or cyst, its nature would be determined by vaginal examination.

A tumor of the mesentery, or a parasitic, uterine fibroid, or impacted feces, might resemble a movable kidney in every respect, except that in a favorable subject it would be possible by palpation and percussion to detect the kidney in its normal location. A careful history would here be of great assistance in determining the cause of the tumor.

The acute, sickening pain and collapse of an extrauterine pregnancy may simulate very closely a Deitl's crisis from movable kidney; here a careful menstrual history, and the finding per vaginam of an exquisitely sensitive tumor near the uterus would reveal the true cause of the symptoms.

Palliative Treatment.—This consists in the adjustment around the abdomen of some mechanical appliance with an idea of supporting the kidney. Goelet⁹ says he has discovered that the straight front corset is a typical kidney support; he also suggests that it is very appropriate to treat a fashionable ailment with a fashionable corset. A pad may be

so fitted within the corset that it will increase the efficiency of this garment as a kidney supporter. Some special device as a truss or padded binder may also be tried; but whatever is used should be properly adjusted each morning before the patient assumes the vertical posture. This method of treatment has only proven successful in a small number of cases.

OPERATIVE TREATMENT.

Reasons for Operating.—Goelet¹⁰ mentions the following which I think are worthy of consideration. 1. When the kidney has descended below the last rib anteriorly it has an abnormal mobility which is not conducive to good health, though it may produce no intolerable symptoms at first. 2. The position interferes with the normal flow of urine from the kidney. 3. The circulation and function of the kidney are interfered with and secondary changes occur in it. 4. The ureter when the kidney descends presses on the ovarian vein and causes more or less venous stasis in the organs it drains. I would add to these that we should operate for pain; severe reflex, nervous or gastrointestinal symptoms; to prevent secondary changes in the kidney; and always if the patient is anxious to have it done. That a movable kidney ever went back to its normal location and remained there is very doubtful; so forced feeding of the patient to increase the perirenal fat will not effect a cure.

When to Operate.—I believe the argument on this point is in favor of early operation in every case; that is as soon as the diagnosis is certain and the patient can be prepared for operation. It may be necessary in some cases to include a week of rest and tonic treatment in the preparation. If palliative treatment is persisted in until secondary changes have occurred in the kidney and other organs and the patient becomes debilitated an operation may then be hazardous and the result unsatisfactory.

How to Operate.—It is interesting to observe the various operations which have been devised with the idea of correcting this condition, and it can almost be said that every surgeon, general and gynecic, has had a method of his own. I will state briefly a few of these methods, and you will note the ingenuity displayed and the gradual advance in surgical technic which they mark.

In 1881 Hahn, the father of nephrorrhaphy fastened the kidney up by the fatty capsule. Henry Morris passed kangaroo tendons through the kidney substance. Senn carried gauze around the lower pole of the kidney, thus slinging it in place, and also packed gauze around it to excite inflammation and granulations. Deaver¹¹ and Biodi¹² advocated the gauze method because, as they said, though it prevented primary union, the suture method did also because urine leaked out. This was because they passed their sutures through the renal tissue, thus forming renal fistulae. This was the beginning of the first advance, namely, the abandoning of sutures through the kidney substance.

Pean sewed a strip of lumbar fascia across the fatty capsule, making a bridge over which he hung the kidney. Ichachner opened the lumbar fascia, placed the lower half of the kidney outside the fascia between the muscles. Beyea¹³ passed rubber tubes around the kidney and out of the wound to hold it in place until union occurred. Noble¹⁴ passed silk worm gut sutures through the fibrous capsule and tied them outside the fascia. He closed the wound without drainage, leaving in the silk worm gut sutures. Goelet¹⁵ passed silk worm gut sutures through the fibrous capsule out through the skin and tied them over gauze. He also packed the lower angle of the wound to excite granulations and to drain. Andrews¹⁶ did what he termed a reefing operation. He brought the fatty capsule out on each side of the kidney, fastened it between the muscles, and closed without drainage.

These methods still being unsatisfactory, the next step forward was characterized by some form of a capsule-splitting operation. Sir Frederick Treves advocated that as firm adhesions never formed between the fibrous capsule and the surrounding tissues, some operation of splitting this capsule was necessary if uniformly good results were to be expected. Another said that experimental study had shown that the fibrous capsule was itself not capable of proliferating to aid in the formation of adhesions. Robert Morris¹⁷ dissected back an ear-shaped flap from the fibrous capsule, and this he passed through and sutured to the psoas muscle. Lanphear¹⁸ made two cuts in the fibrous capsule crossing each other at right angles. The four points of capsule thus made were dissected back, a suture passed through each, and these in turn he passed up through the fascia. He also pulled the peritoneum up around the kidney and sutured it there. Vulliet detached from above a strip of tendon from one of the spinal muscles, passed this beneath the capsule, up through the muscle, and sutured it there. Byron Davis¹⁹ split the capsule and sutured it together again over a strip of muscle from the quadratus lumborum. Mariani²⁰ resected the twelfth rib, leaving the periosteum behind; this he passed beneath the capsule and sutured to the muscles in the eleventh and twelfth inter-spaces.

To Edebohls²¹ of New York belongs the credit for the most classical operation so far produced. He directs that the operation shall be done in the following manner: "Place the patient prone upon the table with an air cushion underlying and supporting the abdomen. Make a straight incision along the outer border of the erector spinæ from lower border of last rib to crest of ilium. Should the space between the rib and ilium be unusually narrow, carry the incision a little more obliquely, so that its lower end will reach the ilium slightly to the outer side of the attachment of the erector spinæ.

"Bluntly separate the fibers of the latissimus dorsi from each other just over the outer border of the erector spinæ, without opening the sheath of the latter. Split the transversalis fascia and expose the peri-

renal fat. Draw the iliohypogastric nerve to one side or other out of the way of injury. If this cannot be done and the nerve must be divided, reunite the severed ends with catgut after anchoring the kidney and before closing the wound. Open the sheath of the quadratus lumborum from rib to ilium along the anterior aspect of its lateral border. The retraction of the cut edges of the sheath will expose a large area of raw muscle. Free the kidney as far as necessary by blunt dissection with the fingers, aided by an occasional clip of the scissors.

Deliver the kidney with its fatty capsule through the wound onto the back. Traction upon the fatty capsule, aided by rolling the patient upward or downward, as may be necessary, on the air cushion, facilitates this part of the procedure. The upper pole of the kidney generally, though not always, emerges first, the rest of the organ following. Should the opening through the walls of the abdomen prove too small for delivery of the kidney, enlarge it by nicking the outer fibers of the quadratus near its iliac insertion. Dissect off and remove the whole of the fatty capsule, exposing the capsule proper throughout its entire extent. Explore by palpation the kidney, its pelvis and the upper end of the ureter. Should anything be found to indicate puncture or incision, this is the proper time to perform either. Nick the capsule proper of the kidney near the middle of the convex border just sufficiently to admit the tip of a grooved director. Pass the director through the opening and on beneath the capsule proper, between the latter and the kidney, and upon it divide the capsule proper along the entire length of the convex border of the kidney to half way around both the upper and lower poles of the organ. Separate the capsule proper by blunt dissection on either side of the incision from the kidney substance, and reflect it forward and backward toward the renal pelvis to about midway between the external and internal borders of the kidney. This will leave denuded one-half of the kidney, more or less, the detached portion of the capsule proper being continuous with the still attached portion and turned back upon it like the lapel of a coat. Resect a portion of the detached capsule proper if too redundant.

Pass four suspension or fixation sutures of forty-day catgut through both the reflected and still attached capsule proper, close to their line of junction. Two sutures are placed on the anterior face of the kidney, one at the middle of the upper and one at the middle of the lower half of the organ. The two other sutures are placed at corresponding points of the posterior surface of the kidney. Each suture runs parallel to the long axis of the kidney, and is passed through the reflected capsule close to the line of reflection, then through the underlying attached capsule, and along beneath the latter between the capsule and the kidney substance, for a distance of two or three centimeters, when it again emerges through the attached and reflected layers of the capsule. Use a Hagedorn needle, with the broad surface running flatwise between the

capsule proper and the kidney substance, to avoid penetration of the latter. Pass the kidney with the eight free suture ends hanging from the capsule proper back into the body. Pass each suture end in succession through the abdominal parietes from within outward, four to the inner and four to the outer side of the incision, each suture piercing the tissues at a distance from its fellow of the opposite surface equal to the antero-posterior thickness of the kidney. The sutures to the inner side of the incision will pierce the retracted sheath of the quadratus near its edge, the quadratus itself, the erector spinæ and the latissimus dorsi; the outer sutures will traverse the transversalis fascia and the latissimus dorsi. All of the sutures will emerge upon the surface of the latissimus dorsi at distances from each other equal to those at which they leave the capsule proper, the highest suture ends emerging immediately beneath the twelfth rib. Leave the sutures untied for the present.

"Close the wound of the muscles and fascia by from four to six interrupted sutures of forty-day catgut, passed in such a manner as to turn the raw surface of the quadratus toward the kidney. This is effected by suturing the latissimus dorsi and the lumbar fascia forming the outer lips of the wound to the latissimus dorsi, the sheath of the erector spinæ and the outer lip of the open sheath of the quadratus at the inner margin of the incision. Gently draw taut the eight ends of the fixation sutures to take in slack between the internal surface of the abdominal parietes and the capsule proper, so as to bring the denuded surface of the kidney into contact with the raw surface of the quadratus. Tie the two ends of each of the four suspension sutures to each other. Bury the suspension and muscle sutures by closing the skin over them with the intracuticular suture. The completed operation will leave the denuded convex surface of the outer half of the kidney in snug contact with the raw quadratus lumborum throughout the entire length of the latter from rib to ilium, the upper pole of the kidney projecting slightly upward beneath the ribs, and the lower pole reaching to an equal extent below the level of the iliac crest. Apply the dressings across the entire width of the back, smoothly and evenly, remembering that the patient is to lie upon them for a week before changing."

The advantages of this method over the gauze-packing operations are: (1) The wound is closed without drainage, and there are no painful dressings; (2) the patient does not have to remain in bed so long; (3) there is less danger of post-operative infection; (4) the kidney is fixed by primary union instead of by granulation. That the adhesions from primary union are the stronger is shown clearly in laparotomies, where the surgeon never drains if he can avoid it, because of the danger of subsequent ventral hernia. (5) In a clean operation like a nephrorrhaphy no method which necessitates the leaving of an open wound to

be packed, if it may be avoided, can justly be termed a twentieth century operation.

The advantages of the Edebohl's method over those which do not split the capsule are: (1) As pointed out, the fibrous capsule of the kidney is not capable of proliferating even if scarified, and the adhesions supplied by the other tissues are so weak that unless a permanent suture is used, the organ is very likely to get loose again—while with this operation the adhesions are produced in three ways: *first*, by primary union of the reflected capsule with the tissues of the loin; *second*, by union of the denuded kidney cortex with the raw quadratus muscle; *third*, there is always more or less oozing from the kidney parenchyma after the wound is closed; this blood being for the most part confined around the kidney, will form a clot; fibrous tissue will grow in, organize it, and thus furnish another source of adhesions. (2) It decapsulates the kidney, which is recognized as a good operative procedure for renal congestion, and more or less of it is always found when the capsule is opened.

The operation is not difficult, and the mortality only a little over one per cent.

REPORT OF CASES.

I am indebted to Dr. Barton Cooke Hirst, of Philadelphia, for the privilege of assisting him in operating on the following two cases, and at this time for the privilege of reporting them:

Case I.—Miss E. P., age twenty-nine, single, school teacher, native of Philadelphia.

Present Illness.—Began one year previous to operation, at which time she noticed that she kept her right shoulder higher than the left, and that while sitting in school she would often lean toward the left side and stretch her right side; she said that doing this made her more comfortable. Ten months later she was suddenly taken with pain in the right side, simulating appendicitis, which lasted for a few days; this attack was followed by subacute pain and the sensation of something moving in the side.

Examination showed the right kidney on line with umbilicus, and freely movable. Dr. Hirst catheterized both ureters and tied the catheters in to collect the urine pure from each kidney. In two hours the right kidney excreted 2 fl. drms., and the left 3 fl. oz.; both specimens were normal.

Operation.—February 9, 1903, by Dr. B. C. Hirst, assisted by Dr. W. F. Sprenkel and myself. Lumbar incision made and kidney suspended by Edebohl's method. Convalescence uncomplicated. Discharged March 3d.

Case II.—Miss E. R., age twenty-five, single, stenographer, native of Philadelphia.

Present Illness.—For fourteen months has had a dragging pain of

varying intensity in the right side of the abdomen; never nauseated; pain radiates to groin.

Examination showed right kidney freely movable down to pelvic brim.

Operation.—June 6, 1903, by Dr. B. C. Hirst, assisted by Dr. W. F. Sprenkel and myself. Lumbar incision; right kidney suspended by Edebohl's method. One week later, when I redressed the wound, I found it had healed nicely. On palpating the abdomen I found a mass about 4x3 inches in size just above Poupart's ligament on the right side. It was movable to a limited degree. I asked Dr. Hirst to see her also, and he diagnosed it a hematoma. Examination one week later: The mass was only half as large and higher up than before. One week later she was discharged, free of symptoms, and the mass nearly gone.

In a recent letter from Dr. Hirst he told me that both patients reported at his office in September, 1904, being, respectively, nineteen and fifteen months from the date of operation, to let him know how well they were. He said they had been entirely relieved of their symptoms by operation.

Case II also writes me that in the two months following her operation she gained twenty pounds, and has been in the best of health ever since.

It was at the request of Dr. R. A. Kerr, of this city, that I kept the histories of the following cases, and that I have written this paper. I am therefore indebted to him for this privilege and for his kindness in allowing me to assist him in the following operations:

Case III.—Mrs. L. F., age thirty-two, married, Peoria, five children, last one born two years ago.

Previous Medical History.—Measles at five years; no other illness except tonsillitis.

Present Illness.—She dates her trouble from the birth of her first child. Her symptoms have been headache, backache of a dragging nature, with occasional attacks of sharp pain across the upper abdomen; some indigestion; no constipation; is inclined to be despondent at times.

Examination.—Patient a well-built, well-nourished woman, who says she never has been thin; weight, 141 pounds; right kidney easily felt, and freely movable on right side of abdomen.

Operation.—September 14, 1904, at Cottage Hospital. Essentially the Edebohl operation. The kidney was enlarged, being 15 cm. (six inches) from pole to pole; it was markedly congested; capsule adherent, and when stripped back there was free bleeding from the parenchyma, which was controlled by the application of hot towels; no other complications; convalescence uncomplicated.

Case IV.—Miss E. B., age twenty-eight, single, Peoria, stenographer since sixteen.

Family History.—Two brothers died of nephritis.

Previous Medical History.—Measles and whooping cough in childhood; no other illnesses.

Present Illness.—For five years has suffered from headache, backache and a dragging pain in the abdomen; capricious appetite; nervous indigestion; palpitation and polyuria; chronic constipation; patient says she has carried the right shoulder higher than the left ever since trouble began, and that she could feel a movable lump in her abdomen by palpation.

Examination.—Small woman, rather thin (says she was heavier before trouble began); kidney easily felt, and freely movable in the right upper quadrant of abdomen.

Operation.—September 24, 1904, at Cottage Hospital; Edebohl's operation. Kidney not enlarged but congested and capsule adherent. Convalescence uncomplicated. Patient kept in hospital longer than three weeks, in order to treat her for nervousness.

CASE V. Mrs. M. S., age forty-three, married ten years, no children, no miscarriages.

Previous Medical History.—Ordinary diseases of childhood; then well until present illness began.

Present Illness.—Five years ago, after doing other hard work, she was cutting grass with a heavy scythe when she felt something jump in the right side; though it caused her no pain it worried her and she stopped working. The next time she bathed, while rubbing her abdomen she could feel a movable lump in the right side, but as it was not painful she did not consult a physician at that time. Since then she has suffered from attacks of headache ending with nausea and vomiting; a dragging sensation in the abdomen, never very painful; palpitation of the heart; and has never been able since then to lie on the left side without having pain in the right side.

Examination.—Fleshy, well built, well nourished woman; right kidney movable to pelvic brim and median line.

Operation.—October 1, 1904, at Cottage Hospital; Edebohl's operation. Kidney slightly enlarged, capsule tight and adherent, cortex congested and bulged out on splitting capsule. On reflecting the capsule, owing to the adhesions, there was considerable oozing of blood from the kidney substance; this soon stopped on the application of hot towels. Convalescence uncomplicated.

Discussion of Cases.—I do not think that present day writers honestly believe that repeated pregnancies, lacerated pelvic floors, external violence, or long wasting diseases are usual causes of movable kidney. It is another example of how one writer copies from the other, possibly fearing he will be criticised if he does not include all the old myths.

Harris²² has reported some very interesting work on a large number of cases, to try to discover the relation of body conformation to this affection. He believes from his investigations that a congenital or acquired

narrowing of the middle zone of the body is the greatest predisposing cause.

You will observe in the few cases I have reported to you that only one of the five women ever had a child, and that none of them ever suffered from a long illness. Case V gives an interesting history, and it would seem that in her case the kidney was dislodged by severe contraction of the muscles of the back; though this was likely the exciting cause, I believe there were predisposing causes, likely in body conformation, enteroptosis, or something of that nature. Owing to the close attachment of the duodenum and hepatic flexure of the colon with the anterior surface of the kidney, it would appear that descent of these portions of the intestine would be an important factor, and it seems to me that this, plus the weight of the liver, is the only relation of tight-lacing to the occurrence of movable kidney. The kidney is so deeply placed that constriction alone could hardly displace this organ; but it could push down the other viscera, which would in turn either press or drag down the kidney. Case I shows the effect of prolapse on the function of the kidney; in a given time the normal one secreted three fluid ounces of urine, while the other one only secreted two fluid drachms, or one twelfth the amount of the one in normal position.

The great increase in the size of the kidney noted in case III may have been a result or a cause of its descent; I should think the former.

REFERENCES.

1. Goelet: Amer. Jour. Surg. and Gyn., August, 1901.
2. Bacon: Amer. Jour. Surg. and Gyn., February, 1899.
3. Beyea: Amer. Jour. Surg. and Gyn., September 21, 1901.
4. Osler: Practice of Medicine, page 847.
5. Hirst: Diseases of Women, page 566.
6. Bacon: Amer. Jour. Surg. and Gyn., February, 1899.
7. Deaver: Annals of Surg., June, 1899.
8. Tyson: Practice of Medicine, page 734.
9. Goelet: Amer. Jour. Surg. and Gyn., August, 1901.
10. Goelet: Jour. A. M. A., November 7, 1903.
11. Deaver: Med. News, February 17, 1900.
12. Bodi: N. Y. Med. Jour., August 4, 1900.
13. Beyea: Amer. Med., September 21, 1901.
14. Noble: Jour. A. M. A., November 7, 1903.
15. Goelet: Jour. A. M. A., November 7, 1903.
16. Andrews: Jour. A. M. A., October 6, 1900.
17. Robert Morris: Amer. Jour. Surg. and Gyn., February 1900.
18. Lanphear: Amer. Jour. Surg. and Gyn., April, 1901.
19. Byron Davis: Jour. A. M. A., May 15, 1902.
20. Mariani: Gazzetta degli Ospedalia (Milan) Vol. XXV, No. 91.
21. Edebohl: Annals of Surg., February, 1902.
22. Harris: Jour. A. M. A., June 1, 1901.

CLINICAL REPORTS.

ABDOMINAL SYSTOLIC MURMUR.

BY W. J. CALVERT, M. D., Columbia, Mo.

ASSISTANT PROFESSOR OF INTERNAL MEDICINE, UNIVERSITY OF MISSOURI.

The patient, a colored woman, fifty-one years of age, was sent to Parker Memorial Hospital by Dr. C. W. Jones of Murry, Mo. Past history is unimportant; history of present illness unsatisfactory. During the past ten years patient has had an occasional attack of vomiting, usually at night, associated with more or less pain in region of stomach and liver. Shortness of breath at night has been marked, of late sharp pains in stomach have been rather severe and associated with more or less fever.

Physical Examination.—The vessels of the neck pulsate markedly and on the right side, especially on coughing, there is a very large dilatation of the jugular vein.

Thorax.—The two sides are equal, movement equal; the pulsation of the heart extends through the entire front of the thorax and the upper half of the abdomen.

Palpation.—Vocal fremitus is the same on both sides. The maximum apex beat cannot be definitely fixed. The pulsation of the thoracic wall is diffuse, wavy and forcible. An intermittent thrill can be felt during one or more heart-beats at the apex, then at the base of the heart on the left side, later over the tricuspid area. A marked systolic thrill is constantly felt over the aortic valve. Distinct systolic pulsation of the liver can easily be felt; no other pulsation observed, save in the systemic arteries. Lungs slightly hyper-resonant.

Heart.—The upper area of heart dullness began in the upper portion of the second intercostal space, and extended toward the left to the mid-axillary line, which in this case was 15 cm. from the mid-sternal line. To the right the heart extended 6 cm. from the mid-sternal line. The area of absolute heart dullness was greatly enlarged.

Auscultation.—The breathing sounds in both sides are harsh, rough, increased in frequency, expiration longer than normal. On inspiration numerous moist rales are present throughout both lungs.

Heart.—In the aortic region a loud, rough, short systolic murmur can be heard. This murmur was not transmitted to the large arteries. The second aortic sound was replaced by a loud, long drawnout diastolic murmur. At the apex a murmur was present, but its nature was impossible to determine, supposed to be mitral insufficiency on account of its transmission to axilla. A systolic murmur at tricuspid valve was also present, but it was impossible to differentiate it from the systolic murmur heard in the mitral region. The pulse was distinctly that of aortic

insufficiency. The arteries at the wrist are thickened. Diagnosis at this time—broken compensation following aortic insufficiency and probable mitral and tricuspid insufficiency, hypertrophy and dilatation of the heart, arterio-sclerosis of the arch of the aorta and general arterio-sclerosis. The patient was put to bed and given tincture of digitalis, 15 minims every three hours.

Subsequent Development.—Rapid improvement in the condition of the heart took place and on April 9th all of the lesions could be easily made out. On this date the lungs had cleared up, breathing sounds were easier, not so rough, and all of the rales had disappeared. There was a short rough systolic murmur in the second interspace at the right of the sternum, associated with a distinct thrill in the same region. The second aortic sound was very short, accentuated and metallic in character. Almost entirely replacing the second sound a murmur of aortic insufficiency was noted. This murmur was blowing, loud and amphoric in quality, and extended through about seven-eighths of diastole. It was best heard at the left border of the sternum on a level with the third rib, was transmitted down both borders of the sternum and toward the apex of the heart, where it was gradually lost and replaced by a systolic mitral murmur which was soft in character, loud and transmitted to the left scapular line. Down the right border of the sternum the diastolic murmur gradually diminished and was replaced by a loud systolic tricuspid murmur which was best heard over the lower end of the sternum. This murmur was transmitted through the vein to the neck, where it was easily heard, to the liver over which it was easily heard, and to all parts of the abdominal wall. The systolic mitral and tricuspid murmur could be easily differentiated the one from the other and from the diastolic murmur in the aortic region.

Liver.—The liver dullness extends from the sixth rib to about four fingers below the costal margin; its lower border could be easily felt and palpated. Two distinct pulsations could be felt in the liver. First, the transmitted impulse from the heart. Second, an expansile pulsation of the liver, due, most probably, to a back flow of blood from the right heart.

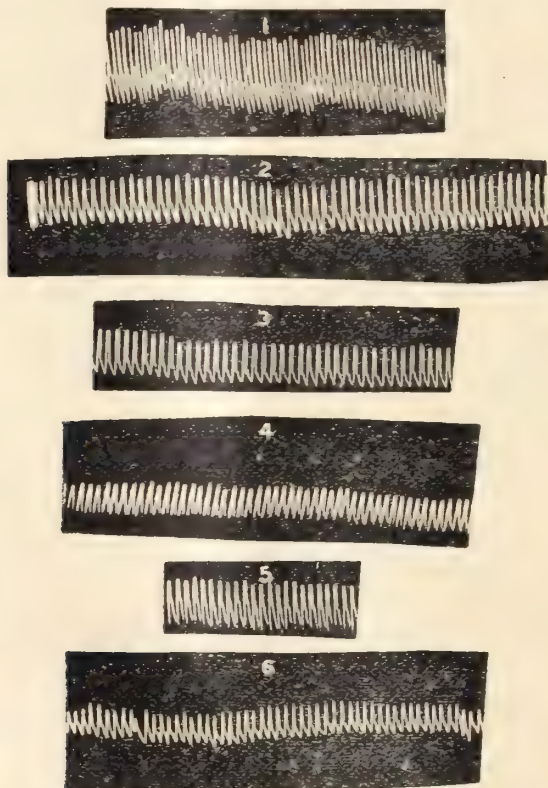
The marked loudness of the systolic murmur which can be easily heard anywhere on the wall of the abdomen was probably due to the enormous lesion of the tricuspid valve and is, so far as I know, quite uncommon.

This murmur was different in character from the systolic murmur often heard over the arteries in cases of aortic insufficiency. Ordinarily murmur heard in the vessels of the lower extremities are not transmitted to the abdominal wall.

After six days in the hospital the heart was 13 cm. to the left of the mid-sternal line and 4 cm. to the right, giving a reduction in the transverse dimension of 4 cm. The pains in abdomen, right side, radiated to

the right shoulder, were probably due to the distension of the liver and stretching of its capsule. The shortness of breath was not so noticeable and patient was fairly comfortable. The systolic murmur could not be heard so well as previously over the abdomen.

The accompanying chart,* made with the same instrument (the lever of practically the same length and the drum moving at the same speed), shows the variations in the pulse-wave at the wrist. On April 7th a characteristic Corrigan pulse with high amplitude and low tension is observed. Under rest in bed and digitalis the amplitude is seen to diminish and there is an increase in tension associated with a decrease in the pulse rate. After eighty-four hours' treatment the pulse-beat is



fairly normal, save the high-arm due to insufficiency. Twenty-four hours after the digitalis has been withdrawn the insufficiency character of the pulse is increased. The increased dilatation of the left heart and the lower blood tension are also seen. Both factors are compensated in another twenty-four hours' rest.

Diagnosis is general arterio-sclerosis, especially in the arch of the aorta; sclerosis of the aortic valve causing aortic insufficiency which was

*Chart was made from sketch, as original tracings were slightly effaced in the mail, and could not be reproduced.

associated with the marked mitral and tricuspid insufficiency; oedema of the lungs, pulsation and distension of the liver, and a marked systolic murmur transmitted the entire abdominal wall.

In the chart Fig. 1 represents the pulse tracing twelve hours' digitalis treatment; Fig. 2, thirty-six hours; Fig. 3, sixty hours, and Fig. 4, eighty hours, after which digitalis was discontinued. Fig. 5 shows pulse tracing twenty-four; Fig. 6, forty-eight hours after withdrawal of digitalis.

FOREIGN BODY IN THE TRACHEA.

BY L. P. POLLMANN, M. D., St. Louis.

About three weeks ago Dr. J. F. V. Krebs and myself were hurriedly called to see a little boy of two years, who, while seated at the table and amusing himself with buttons, pins, and sundry articles, was suddenly seized with an attack of choking. The mother stated that while in a room adjoining she heard the child scream, and rushing to its assistance, found it very much agitated, cyanotic and breathing heavily.

The little chap having enjoyed perfect health up to this very moment, and no throat disease being discernible, the natural presumption was that some obstructing agent must have entered the air passages from without, and it was probably to be found in one of the various play-things the child had been toying with at the table.

The gravity of the condition was explained to the mother, and immediate operation advised, which was readily accepted. A tracheotomy above the isthmus of the thyroid gland was done, because it was held that the larynx as well as trachea would be equally easy of access through an incision in that locality. At the moment the tracheal wound was drawn asunder for subsequent instrumental exploration, a small brass rod shot up into it from below, evidently carried along by the expiratory current. It was easily extracted, and proved to be quite a stout scarf-pin two inches in length, and carrying an ovoid head 7 m. m. in diameter. Free respiration was re-established at once, the mucous membrane of the trachea presenting a normal appearance. The wound was closed immediately and a dressing applied.

Recovery was complete eight days thereafter, when the sutures were removed and the patient discharged.

Considering the large size of the pin's head, the diameter of which corresponded with that of a trachea (lumen, of course), two years old, it is certainly to be wondered at why the obturation of the windpipe did not become complete at the moment of entry of the foreign body and terminate the youngster's life abruptly.

The trachea of the child is frequently found to widen as it approaches the bifurcation, and this factor, in connection with prompt surgical interference, no doubt determined the very gratifying result achieved in our case.

EDITORIAL COMMENT.

THE IMMEDIATE CIVIC DUTY OF ST. LOUIS PHYSICIANS.

It is well understood by those whose acquaintance with American cities enables them to make just comparisons that the city of St. Louis has failed in many respects to keep pace with the march of municipal progress. The Louisiana Purchase Exposition served to impress numerous lessons of good municipal housekeeping, and thereby the public has come to have a better appreciation of just what are St. Louis's most glaring shortcomings. It seemed probable that the time had arrived when the citizens would be willing to increase the tax rate for the purpose of supplying the various municipal needs already provided for by other cities. To this end the proposition authorizing the issuance of \$9,000,000 worth of bonds was submitted to the people at the election in April. Although requiring to carry two-thirds of the total number of votes cast, it did not receive even a majority. The reasons for the failure are not far to seek. In the first place the citizens of St. Louis have always proved reluctant to tax themselves for public improvements. The example of New York, which has gone deeply in debt to provide parks, the subway, etc., and indeed the example of all American cities which have undertaken projects looking to the convenience and health of their citizens, does not appeal to our people as one to be unqualifiedly followed. In the second place, the bond proposition as submitted to the people included a number of projects. It was proposed to devote a certain sum to the erection of new public buildings; another, to the laying of sewers; still another to the construction of a magnificent boulevard connecting the city parks; still another to the erection of new municipal hospitals, and the enlargement of others already in existence. Although these projects varied greatly as to necessity and desirability, they were conjoined in such a manner that an affirmative vote meant concurrence with one and all, and *vice versa*. It is hardly to be wondered at that the thoughtful and independent voter resented being asked to cast a single ballot on the question of providing funds for these unrelated projects, and showed his resentment by casting a negative ballot.

One who has made a careful study of the local situation cannot escape the conviction that the paramount municipal requirement is for new municipal hospitals. The citizens of St. Louis are fairly well acquainted with the deficiencies of their hospitals, but it is doubtful if they fully realize how utterly inadequate they are to present requirements. Perhaps the worst feature is the overcrowding which exists and has existed for many years. Rarely, if ever, has the bed capacity been equal to the hospital population. The writer recalls vividly the conditions which he observed in the colored surgical ward of the city hospital. This is a

room approximately 18x50 feet, opening on a corridor at the eastern end and provided with two windows at the western extremity. Single iron beds are ranged along the northern and southern walls. On several occasions the writer has seen two negroes occupying each bed, a third wrapped in a blanket beneath the bed, and a fourth occupying a cot between adjoining beds. Could there be a sadder or more shameful commentary on a city's indifference to the rightful claims of her poor citizens whose dire necessities compel them to seek her hospitality?

In the light of these facts every local physician, who aspires to be at the same time a good citizen, has a very obvious duty to perform. He should embrace every opportunity to acquaint those with whom he comes in contact, both professionally and socially, with the shameful conditions of our city hospitals. He should expound his conviction that the paramount municipal need in St. Louis is for new hospitals; he should endeavor to show that compared with this need other municipal requirements are trivial. Thus will be created an overwhelming public sentiment in favor of municipal hospitals, which in time would give rise to a demand that future bond propositions should be subdivided into as many component parts as there are separate projects, in order that the imperative and pressing need for new municipal hospitals might no longer be unfulfilled.

THE MEDICAL EDITORIAL.

Medical journals are in the habit of devoting a certain amount of space in each issue to what must be taken as an expression of the journals' views on topics of medical interest. It might be of some benefit to determine just what purpose these editorials are supposed to serve and how near they come to doing so.

In editorial writing the personality of the writer is hidden behind the larger collective personality of the paper in which the editorial appears. This is its strength and the weakness. Editorials commonly deal with three classes of subjects. The purely medical and technical are the most frequent; here a supposedly objective opinion is expressed upon some paper dealing with an investigation of some new research or discovery. Local questions of medical interest form the next most common text of the editorial and lastly are the subjects that touch medicine directly or indirectly taken from the larger experience in the life of the community or from the nation.

Of the first sort there is not much to be said, for the reason that between it and an abstract there is little real difference. Criticism of a medical contribution, pure and simple, loses its value the moment the author's name is withheld. The essence of criticism of this kind lies in the worth we are accustomed to attach to the critic. Evidence of special knowledge on the special subject criticised is demanded. The obvious discrepancy in medical editorials of this sort lies in the fact that the

journal does not express its own opinion for by a queer development of medical journalism it is in possession of none and represents none. It must be apparent that the reason for editorials of this nature does not exist.

On the other hand, there seems to be a real need for editorial writing dealing with subjects in the second and third classes. This need is more acutely felt than filled. In the complexity of the present day civilization, medicine is taking at least two methods of developing: on the one hand, as a part of the educational force and on the other, as a part and a necessarily vital part of the effort to increase the nations' power by increasing their physical vigor and ability to withstand contagion of all sorts. In other words, medicine appears in two aspects, as a branch of knowledge, pure and simple and as a part of civic activity. It is in these two aspects which editorial writers might find proper subjects to write about and to develop the necessary skill in presenting the ideas inspired by the subject in a proper editorial way.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

Microscopic Examination of the Fasting Stomach Contents and Its Diagnostic Value.—ACKERMANN and GOMPERTZ (*Medical Record*, No. 1,796, 1905,) call attention to the importance of a microscopical examination of the fasting stomach contents in making a diagnosis of diseases of the stomach. The contents are spread out upon a white plate and suspicious particles are selected and examined. When normal gastric juice is present we may find the nuclei of partially digested leucocytes and epithelial cells, isolated yeast cells and myelin bodies. The fact that the leucocytes and epithelial cells are changed indicates the presence of pepsin and hydrochloric acid. Abnormally, we may find, when there is no stagnation and no hydrochloric acid, leucocytes and epithelial cells that are unchanged, and possibly pus, blood, mucus, myelin bodies and sometimes infusoria. Not disturbing the motility, this condition would indicate carcinoma. When there is stagnation with hydrochloric acid, it would indicate either a benign obstruction or ulcer carcinomatum of the pylorus, and the findings would be food remnants, sarcinæ and yeast cells and possibly blood cells. With stagnation and without hydrochloric acid, the Oppler Boas bacilli, yeast cells branching and the absence of sarcinæ, indicate cancer. When mucus is present its origin can only be ascertained by a microscopical examination. If pavement epithelial cells are present in large numbers, the mucus comes from the upper digestive tract, while the occurrence of a great many cylindrical epithelial cells is positive evidence of its origin from the gastric mucosa. Of protozoa, two varieties have been found in the stomach, the trichomonas hominis and the megastoma entericum. They are readily recognized by their motility and by their peculiar characteristic shape. For the development of infusoria four conditions are necessary: (1) Absence of hydrochloric acid; (2) presence of alkaline reaction; (3) absence of stagnation; (4) existence of pouches or deep folds of the gastric mucosa. Cohnheim maintains that the presence of infusoria is pathognomonic of cancer, not affecting the motility, and that their presence may be determined long before a tumor can be felt.

Chronic Pneumonias of Patients Suffering from Heart Disease.—D. ROTHSCILD (*Berliner Klinische Wochenschrift*, No. 13, 1905,) maintains that chronic heart disease has a tendency to increase the power of resistance against tuberculosis of the lungs, especially in cases of mitral stenosis, causing a pulmonary hyperemia, but that it is a predisposing factor in all forms of pneumonia. The impaired circulation produces interstitial changes in the lung tissues, which further retard the circu-

lation and affect the parenchyma. The conditions most frequently met with are persistent chronic bronchitis, due to lowered vitality, chronic induration, areas of anemic infarction, when embolism is present, areas of thickened pleura, due to localized pleurisy, fibromatosis, etc.

The Esophagoscope in the Dilatation of Cicatrical Stenosis of the Esophagus.—REIZENSTEIN (*Muenchener Medizinische Wochenschrift*, No. 12, 1905,) advocates the use of the esophagoscope in cases of stricture of the esophagus. Dilatation of the stricture, as a rule, is very difficult, and often the cicatrix is in such shape that the instrument is directed away from the lumen of the stricture. He recommends that if after several attempts we fail in passing a small, cone-shaped English bougie, we should resort to the esophagoscope and the accompanying set of esophageal sounds and drainage tubes. After passing a small-sized sound successfully, a drainage tube is left in the tract for a few hours, after which it is removed. From time to time larger tubes are passed until recovery is complete. Great care must be exercised not to use undue force, so as to avoid injuring the tissues. Their use has saved patients from undergoing an operation.

Injuries to the Kidneys.—HABS (*Muenchener Medizin. Wochenschrift*, No. 13, 1905,) reports a case of rupture of the kidney without hematuria. He calls attention to the fact that absence of blood, pus or albumen in the urine does not necessarily speak against injury to the kidneys, and states that we may be justified in making that diagnosis when, after a fall or an injury in the lumbar region, there is immediate shock, accompanied by severe pain on the affected side, the pain radiating to the lower abdomen, bladder, testicles and rectum, a marked decrease in the excretion of urine, vomiting, tenderness in the abdomen and contraction of the recti muscles on the affected side.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

The Expectant Treatment of Appendicitis and Excursion Into the Field Between Surgery and Medicine.—BERNAYS (*Medical News*, February 25, 1905).—This article has attracted more attention than any other recent contribution to the clinical surgery of this subject for the reason that it distinctly shows the author's extensive experience to have been absolutely at variance with ideas which had become pretty well fixed in the minds of many surgeons. This is particularly true as far as the Ochsner treatment is concerned. Instead of treating the early inoperable case with opium, etc., Bernays advises purgation and seems to have been equally as successful, to say the least, as have the adherents of the opposite school. Of course it is to be clearly understood that an operation is the only rational treatment where the patient is seen early in the at-

tack, but when this favorable period is past then Bernays considers it little less than a crime to use drugs, which lock up all the poisons by stopping secretions and excretions. The writer is very caustic in his treatment of the surgeon and of the pathologist who removes a normal appendix and then attempts to prove that it is diseased. From a historical standpoint the author's comparison of Spencer Wells and Lawson Tate is decidedly interesting, and especially is this true in view of the fact that Bernays was perhaps the first American surgeon to lay sufficient stress upon the evil of using morphine after laparotomies in general. The author's operative experience has not taught him that a dose of salts will drive intestinal contents out through a perforation in the appendix, hence he does not see herein a reason for not purging a patient who is about to be operated upon. Indeed, he decides that an operation if done on such a patient gives a much better outlook than if the sufferer has been treated by the opium splint method. Bernays very rightly concludes that statistics do not prove much in this connection since they are so susceptible to juggling.

Enchondroma of the Tongue.—ROUTIER (*Bulle. et Mem. de la Soc. de Chir. de Paris*, April 11, 1905).—The victim of this extremely rare malady was a woman twenty-one years of age. About four years ago she noticed an enlargement on the right side of the tip of the tongue; this gradually increased until the present time. Of course a definite diagnosis was only possible after an excision of the mass had been made. The tongue was sutured after the tumor had been removed and healed as kindly as a wound in any other part of the body could have done. The operation is too recent for a report as to definite cure.

A Contribution to the Treatment of Diffuse Suppurative Peritonitis.—CLAIRMONT and RANZI (*Archiv. fuer Klinische Chirurgie*, Band 76, Heft 1 and 2).—This report naturally carries with it considerable weight, when the fact is taken into consideration that it embodies more than three years' work of the first surgical clinic in Vienna. The disease resulted from a variety of causes, perforations of the appendix, stomach, duodenum and gall bladder being chief among them. In appendix cases with peritonitis the author's custom is to remove the offending organ and drain with gauze. Twenty-five of the cases were of this sort and ten recovered. When operating for perforation of the stomach it is advised that we make a fistula as high as possible in the gut in order that the patient may be fed through the same. In all, there were forty-one cases treated and fifteen of these recovered. Emphasis is laid upon the value of flushing the abdomen with large quantities of salt solution, most of the cases having been treated in this manner. The custom was, in all cases, to make a large median incision, unless it was possible to locate the disease definitely to some other portion of the abdomen. Great stress is laid upon the value of gauze drainage, something which has outgrown its usefulness in the United States, to say the least. These drains were left in place three or four days as a rule. It seems strange that the German writers still persist in ignoring American surgeons in articles of this nature; here is one of more than sixty pages in a leading German publication, full of suggestions, which are considered obso-

lete by American surgeons who can show results far better than those exploited in the article from the Vienna clinic.

A New Procedure for the Radical Cure of Inguinal Hernia.—ROCHARD (*Gazette Hopitaur*, April 18, 1905).—The most excellent procedure detailed in this article, one which American surgeons will be surprised to find labeled "new," consists in an overlapping of the tissues as originally proposed by Andrews of Chicago. The author's method of overlapping the different layers differs in one particular from the original composition of Andrews, however, and is identical with the Halsted operation, as published in 1903; that is, the cremaster muscle is brought up behind the internal oblique, and then the latter is brought down to Poupart's ligament, after which the upper flap of the aponeurosis is made to overlap the lower one. All of these authors, who have written upon this subject, seem to have placed their deep sutures through the ligament and from the inside. It remained for Dr. John Young Brown of this city to suggest and practice the very simple matter of inserting mattress suture through the ligment from the outside, and thus draw down and anchor the internal oblique muscle much more securely than can be done in any other way. This method was suggested by Dr. Brown at a meeting of the Missouri Valley Medical Society in March of this year, with the statement that he had been practicing it about one year previous to that time. There is one point of particular interest in Rochard's article, and that is with reference to enlarged veins found in the canal. He does not agree with Halsted that these cause the hernia and should be removed; on the other hand he suggests that the pressure of the hernia may cause the enlargement of the veins, and that they will subside spontaneously after the rupture has been cured.

Resection of the Middle Third of the Stomach for Carcinoma of the Greater Curvature.—SCUDDER (*Annals of Surgery*, May, 1905).—The author remarks that the seat of the disease is uncommon, as is this form of operation. The patient was a woman thirty-seven years of age, who had been well until very recently. She had lost very little weight. The tumor could be felt in the middle line and did not involve the large bowel, so clamps were placed above and below it directly across the long axis of the stomach, and after the vessels had been ligated and the tumor cut away, the two free ends thus formed were reunited by an interrupted Connel suture. The patient made a rapid recovery and ten months after the operation is free from recurrence of the disease. The steps of the operation, as well as the structure of the tumor, are all illustrated by most beautiful cuts.

A Case in Which the Entire Face Was Torn Away.—KACSI (*Beitragge Zur Klinische Chirurgie*, xvi Band 2. Heft).—The subject of this most unusual and shocking injury was a woman fifty-four years of age. She was standing on a step ladder lighting a street lamp, when the ladder, which happened to be resting on ice, slipped from under and her chin caught on a hook, with a result that the weight of her very heavy body was sufficient to tear off her entire face from below upward, as she fell. A physician, who happened to be in the vicinity, ligated the

bleeding vessels, applied a temporary dressing and sent her at once into the clinic at Heidelberg. "The next day her face was sent in by mail." The lower jaw bone was torn out of its sockets and remained with the face, as did all of the soft parts as far as the eyes, including the lower lids, the nose and a small portion of the forehead just over the roof of the latter. The patient had to be fed through a tube. Life was maintained without much trouble until the expiration of eight weeks, when healthy granulations had appeared everywhere. Skin grafts were now applied everywhere with perfect success, but the salivary glands had to be removed on account of there being no place for their secretion to go except upon the skin, which was greatly irritated by it. A photograph of the patient taken just before she left the hospital, shows something like a human face. By dint of much practice the patient has finally learned to swallow semi-solids, and is able to talk fairly well, although this was hardly possible at all for some time after the injury.

Apropos of Carotid Aneurisms.—MENDES (*Revue de Chirurgie*, April, 1905).—The author excised two of these tumors successfully and gives the histories of the two patients, whom he was able to send home in a very short time after operation. He states that the chief objection to this form of treatment has come from those who supposed that it was very difficult to remove such a mass without causing too much injury to surrounding tissues. He has found that this statement holds good only in very old cases, since strong adhesions do not form very early. The author goes at considerable length into the discussion of the results of ligation of the common carotid, stating that the brain symptoms may be transient and disappear altogether. The operation is much simplified and rendered invariably safe by a preliminary ligation at the central end of the tumor.

HYGIENE.

IN CHARGE OF

A. E. TAUSSIG, M. D.

Food Preservatives and Food Adulteration.—H. W. WILEY (*St. L. Med. and Surg. J'l.*, 1905, No. 4).—At a recent meeting of the Philadelphia County Medical Society the chief of the Bureau of Chemistry of the United States Department of Agriculture read an interesting paper with the above title.

We have many food preservatives which have been in use since the earliest times, the usual condimental preservations and substances which reveal themselves to the consumers by their odor and taste, such as common salt, sugar, vinegar and wood smoke. Their established use is well recognized, and no legislation has forbidden the use of such preservatives. There is another class of preservatives, known as antiseptics; and in the quantities in which they are used they have neither taste nor odor, so that their presence is unknown to the consumer unless stated to him.

One of the abuses against which a successful fight is being waged is the artificial coloring of food products. The coloring of butter, which once was almost universal, is becoming much less so. Farmers are slowly learning that their customers prefer uncolored butter, and will pay a higher price for it. Oddly enough, this is much less true in the south than in the north. The further south one goes the deeper the people want the color of their butter. Why a high temperature and a desire for high color in butter should go hand-in-hand is not clear, but the fact remains. The use of copper sulphate in canned peas and beans is even more universal and less defensible. Copper sulphate is used not only as a coloring matter, but as a mordant, in order to intensify and fix in the tissues of vegetables their natural green color. Without its use the color of peas and beans fades after a certain time, even though they be kept in the dark. Our new food law, while by no means perfect, will aid in the prevention of this abuse. Since the second of February we require that all food products entering this country artificially colored shall bear a label so stating, without asking in any case that the material for coloring be declared, except in the one case of the copper sulphate, which is not solely a coloring matter, but also a mordant.

The writer's experiments have convinced him that all antiseptics in foods are injurious and unnecessary. Probably the least harmful of those in common use is borax, and yet the writer's experience with his "poison squad" has shown that the use of borax in quantities of half a gram a day and extending over a period of fifty or sixty days is distinctly deleterious to health.

Sulphurous acid is found largely in foods, especially in desiccated fruits which are subjected to the fumes of burning sulphur to retain their color. It is also used to preserve wine, and is produced by burning sulphur in the casks. There is no way of preserving the natural color of dried fruits except by fumigation with sulphurous acid. Whether that is justifiable or not is another question, but it is a practice which appears to be universal, and the same is true of the burning of the sulphur match in the barrel in wine-making, a practice which has come down from antiquity. But when sulphur is employed, as at the present time, in an enormous excess for preserving a poor wine and putting on the market a new wine before it has ripened it is unpardonable.

Our new law gets around the difficulty of deciding what preservatives are deleterious and what not very ingeniously. It says that any food product not allowed to be sold in the country in which it is made shall not be allowed to come to the United States. On that ground we have sent back several cargoes of German sausage containing borax, and on arriving at the German frontier they are inspected and rejected, and, like the "Flying Dutchman," are still sailing over the sea seeking a port, a haven of rest.

The Medical Inspection of Public Schools.—WM. S. CHASE (*The Cleveland Med. J.*, 1905, No. 2).—The general subject of medical inspection of schools naturally groups itself under three heads:

First, and possibly the point on which most stress is generally laid, the detection and isolation of communicable diseases.

Second, the enforcement of sanitary surroundings.

Third, the detection and direction of the "physically unfit."

Boston stands first in the list of American cities to institute a medical inspection of schools, the first appropriation for that purpose having been made in 1892. The methods followed there are in brief as follows:

Inspectors are generally selected from the younger men in general practice, as they have the most time to devote to the work. The work has nothing to do with therapeutic systems, but requires simply the ability to make accurate diagnoses. The number of pupils in Boston schools is about 100,000. There were, when this report was made, 250 school buildings and fifty inspectors. This gives each inspector the supervision of about 2,000 children. The pay is only \$200 a year. Children, if found ill, are not allowed to consult the inspectors professionally, but are directed to their family physicians, or, if poor, are referred to a proper hospital. An association of the inspectors has been formed, and regular meetings are held to discuss questions pertaining to their work. The inspector sees only those children to whom his attention is called by a printed slip on which the teacher has noted the symptoms she has observed or the complaints which the child has made. On each child's slip he records his diagnosis and advice. Questions of drainage, plumbing, heating and ventilation are not considered by the Boston inspectors, but are referred to special experts of the board of health.

In New York the inspectors are also obliged to visit the homes of pupils absent for several days without excuse. These visits, from November 2, 1903, to May 12, 1904, resulted in the detection of 890 cases of contagious disease not reported. In no case does the medical inspector prescribe drugs; that is looked upon as the distinct function of the family physician.

Detroit's experience with medical school inspection is interesting. The experiment was tried in 1902. No funds were available with which to pay inspectors, and volunteers were called for. The number of schools first inspected in February of that year was four, in March twenty-six more were added and in May the total was increased to fifty. In the four and one-half months of that school year 10,554 examinations were made, and 914 exclusions resulted for the following cases:

Scarlet fever.....	11	Impetigo.....	24
Diphtheria.....	1	Whooping-cough	19
Tonsillitis	314	Chickenpox.....	79
Measles.....	78	Pediculosis.....	151
Mumps.....	128	Other diseases.....	117

The writer hopes that at no distant day every town in the country may have its board of medical inspectors, sanctioned by the board of education and under the direction of the executive officer of the board of health. He would have these inspectors give general attention to the sanitary surroundings, the detection of contagious diseases and the discovery of any defect militating against the health or future progress of

the child, always being careful not to usurp in any way the province of the family physician.

The Fight Against Malaria Near Rome.—G. GALLI (*Muench. med. Wochenschr.*, 1905, No. 6).—The attempt to root out malaria, that curse of the Roman Campagna, is being persevered in by the Italian government with constantly increasing energy. The government itself manufactures quinine and sells it at a nominal price to the inhabitants, so that the poorest need not hesitate to make full prophylactic use of it. This, together with the nearly universal use of screens and mosquito netting, has resulted in a marked diminution of the prevalence of malaria. Genuine cases of malaria are almost becoming a rarity in the local hospitals, and in the largest one, that of Santo Spirito, no case of pernicious malaria has been admitted within the past two years, whereas formerly an average of four or more came to autopsy annually. The recently adopted agrarian laws have the same end in view, and aim at the cultivation of all waste land and at improved drainage of the surface water. For this purpose the government lends the necessary capital to the land owners at extremely favorable rates. For the first five years they have only to pay the interest ($2\frac{1}{2}$ per cent.); thereafter the debt is slowly to be paid off in forty-five annual installments. Obstinate land owners, who refuse to make the necessary improvements, are forced to part with their property, which is then sold to those who will carry out the provisions of the law. As a result of all this a marked improvement of the country-side is already noticeable. Formerly all the peasants were forced to leave the low country during the malarial season and to take refuge in the hills, so that one could travel for hours by rail without seeing a human being, and Rome might truly be called an oasis in the midst of a desert. Now permanent homes are springing up everywhere in the Campagna, the desperate poverty of the Roman peasant is becoming a thing of the past and it will apparently not be long before the Campagna will again be dotted with villas and prosperous farms as in the days of the early Roman Empire.

THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

Treatment of Gout.—SCHMOLL (*Jour. Am. Med. Assoc.*, April 29, 1905, p. 1,348).—Assuming on experimental grounds that in all probability uric acid exists in the circulating blood of normal individuals in combination with thymic acid, Schmoll shows experimentally that in gout at least some of the uric acid in the circulation remains uncombined with thymic acid, and that it is formed synthetically from the paranucleins which in normal individuals do not increase the uric acid excretion. This uric acid which exists in the circulation uncombined with thymic acid is not excreted by the kidneys and is responsible for the gouty disturbances. The writer has treated thirty cases of gout on the basis of

these experiments. The excretion of uric acid is constantly increased during this medication, the increase varying from 0.17 to 0.42 gr. in twenty-four hours, but subsiding in about ten days. This the writer explains by saying that in that period all the uncombined uric acid has been excreted and the quantity of daily excretion returns to its former level because the daily increment of uncombined uric acid is too small to be estimated by our analytical methods. The dose of thymic acid is 3 to 4 grains given three or four times a day. When the dose is much larger than this inflammation is produced in local deposits of uric acid which subsides in about forty-eight hours. In a few cases the thymic acid produced gastric disturbance. The heart and kidneys remained uninfluenced even by the larger doses. Ordinarily the patients feel unusually well, motion in affected joints becomes easier and swelling decreases. In the only acute attack treated, the pain and swelling disappeared completely within six hours.

The Use of Creosote in the Treatment of Pulmonary Tuberculosis.—TAYLOR (*St. Paul Med. Jour.*, April, 1905), makes a vigorous plea against the use of creosote, and points out the harm which it frequently does the patient in disturbing the alimentary tract and thereby destroying his main defence against the disease, viz., the ability to assimilate a maximum quantity of food. It is a caustic in its action, is, even in the best preparations, not uniform in composition and is objectionable both in odor and taste. The contention of its advocates that creosote stimulates appetite and acts as an intestinal antiseptic is weakened by the fact that this stimulation is secured by an irritation of the gastric and intestinal mucous membrane, and can be produced without the irritation by a much safer class of drugs—the bitter tonics; the same may be said of its antiseptic action in the intestines. The claim of an antiseptic action in the tissues is futile. In the first place the tubercle bacilli lie in areas (the tubercles), in which there is the minimum of circulation, even of tissue lymph. Secondly, it has been repeatedly shown in an experimental way, that animals injected with tubercle bacilli and treated with creosote, die as quickly as their controls.

The Treatment of Hyperacidity and of Gastric Hypersecretion.—ALBU (*Therap. d. Gegenwart*, p. 153, April, 1905) prefaces his article with the statement that the treatment of hyperacidity should take into consideration all causal factors, and that when it develops or is associated with a neurasthenic condition the general treatment is of utmost importance. The hyperacidity itself is to be met by dietetic measures in the first place, and only under urgent necessity by medicinal treatment. The time-honored proteid diet has in many cases proved inadequate, as, though it combines with the free acid, it also stimulates its secretion. Selected vegetable fluids, carefully prepared, are less stimulating and may be made unirritating. All uncooked vegetables and fruit should be excluded, as well as those which contain much cellulose, especially hulls and skins. The vegetables of the latter sort may be given in the form of purees, in which the objectionable parts have been removed. Purees have the added advantage that they dilute the acid gastric juice. Starches may be employed to advantage provided they be very finely

divided; thus graham bread and rye bread should be avoided. But the fine wheat breads, especially in the form of toast, zwieback, cakes and crackers, may be of decided advantage. A meat diet is of course to be permitted when otherwise suitable. The only form of food which is uniformly badly borne is fat. This should be avoided, with the exception of small quantities of fresh unsalted butter, and small quantities of pure olive oil, given alone. Sugar is badly borne by many patients. Of liquids, milk, cocoa and chocolate are usually well taken.

In general, meals should be small in amount and at frequent intervals in order to supply substances to combine with the superfluous acid.

In severe cases, Albu suggests lavage late in the evening three to four times after the last evening meal, or early in the morning. At the end of each lavage an alkaline solution or mineral water may be introduced and left in the stomach; or a suspension of burnt magnesia in a solution of sodium bicarbonate may be used. Most effective is a combination of belladonna with alkalies, as may be seen in the following prescription:

Ext. balladon.....	0.3
Bismuth subnit.....	
Magnes. ustae	
Sod. bicarb. aa	10.0

To be given in doses of half teaspoonful one to two hours after the principal meals.

In hypersecretion it is important to reduce the quantity of fluid ingested, in order to avoid as much as possible additional distension of the already atonic stomach wall. When it is desirable to give milk, this may be boiled down to half its volume. Solid food should be given in well prepared, but thick purees. Nourishment should be given in very small quantities, at intervals of one to two hours. The choice of foods should be that suggested for hyperacidity. The accumulated gastric juices may be removed by the stomach tube late at night or early in the morning before food is taken.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

About the Resorption in the Kidney.—W. LINDEMANN (*Ziegl. Beitr. z Pathol. Anat.*, vol. xxxvii, Heft 1).—So far no evidence has been brought forward for the resorbing capacity of the kidney, that means for the assertion that the filtrate of the glomeruli on its course to the pelvis is concentrated within the tubuli. Lindemann's experiments show that such a resorption does not exist. By injecting through the ureter staining solutions or olive oil, he found that the fluid could be pressed up high into the tubuli, according to the degree of the momentary amount of urine present in the latter. If the pressure is too great the fluid causes mechanical lesions and penetrates into the tissues between the canaliculi,

thus eventually reaching the other kidney, and wrongly representing a resorption from the tubuli. If, however, the pressure of filtration by the glomeruli is equalized by a careful regulation of the pressure used in the injection, so that the filtration is stopped, after the old theory the volume of urine within the tubuli ought to recede and the injected fluid ought to rise higher within them. This, on the contrary, does not occur, according to the author's experiments, and he, therefore, concludes that a resorption by the urinary tubules does not exist.

Investigations About the Toxin of the Dysentery Bacillus.—H. LUEDKE (*Centr. f. Bacteriol.* vol. xxxviii, Heft 3).—So far it has been asserted that it was possible to obtain from dysentery bacilli by autolysis, or from a filtrate of heated cultures, a toxin of considerable efficacy. Similar findings were made by Rosenthal, who used bouillon cultures three weeks old. Luedke has attempted to demonstrate the existence of a toxin by using the method of McFadyen. He reduced to dryness bacilli grown on agar, poured liquid air over them and reduced them to a powder by manual pressure. An emulsion of the powder was filtered through a pual, and he thus obtained a sterile solution, of which 0.1 to 0.05 c.m. caused the death of a rabbit in forty-eight hours. The autopsy of the animals revealed no specific lesions. No antitoxin production was found. The author infers from his experiments that in all of the so-called toxins of the dysentery and typhoid bacilli thus far prepared, the nature of the substances as real toxins has not been established, but that they always represented an endotoxin, only able to give rise to the formation of amoebocytes and agglutinin.

Red-Leg. An Infectious Disease of Frogs.—HAVEN EMERSON and CHARLES MORRIS (*The Journal of Exp. Med.*, vol 7, No. 1).—An epidemic disease that occurs among frogs in their native habitat as well as in captivity, where it often causes in laboratories the loss of the majority of the animals confined (in St. Louis, too, it has been observed) has been the object of a very clever study of Emerson and Morris that, practically, has resulted in effective means to preserve intact the stock of these batrachians, often so precious. Here, we shall only refer to the general results of the investigations.

The disease is caused by a bacillus, frequently found—the bacillus *hydrophilus fuscus*, and is widely distributed over North America and Europe. It is observed mainly during September and October, at least in this country, characterized by congestion of the ventral surfaces of the body; it leads to ulceration of the skin, excessive serous exudation, parietic conditions, coma and death. The blood always shows an advanced degree of anemia and leucocytosis. The bacillus destroys the red corpuscles, and great laking of the blood, the presence of many nuclei, great diminution of the number or almost total absence of the red corpuscles are in proportion to the severity of the infection. By inoculating frogs, the authors have shown that while temperatures a little above freezing have no harmful effect upon the frogs, they completely control all manifestations of disease in inoculated or diseased frogs, if the latter are left in the cold for a period as long as seven days; and, further, that even short periods of exposure to cold will bring about a delay of the

fatal results in diseased or inoculated animals. Predisposing causes are mainly lesions of the skin, which in most cases seem to be the point of entrance. Besides this, anemia and very high temperature favor the infection. In this respect it is interesting that many of the sick frogs were infected with other parasites that directly destroyed red corpuscles, but in no case interfered with life. The bacillus is very toxic and virulent for guinea-pigs, but not for rabbits. The directions given for the proper keeping of the frogs, and for the prevention of the disease, will be valuable for many laboratories.

The Question of Latent Tuberculosis.—A. WEICHELBAUM and J. BARTEL (*Wien. Klin. Woch.*, No. 10, 1905).—Neither the location nor the degree of a tuberculous condition allows of a reliable inference as to the way in which the tubercle bacilli entered the organism. For the elucidation of this problem the authors have resorted to investigations on latent tuberculosis. They examined lymphatic glands and tissues from children dying with other diseases but tuberculosis, and the organs of which did not show at autopsy any tuberculous changes. The method was the animal inoculation that in a number of cases resulted positive. It seems to follow from this that living tubercle bacilli have penetrated into the lymphatic glands and have kept alive there, at least for a certain time, without giving rise to specific tuberculous tissue changes. The existence of a latency in tuberculosis must be assumed, although the material is as yet too scanty to allow of a theoretic utilization of wider range.

A Study of the Bone Marrow in Typhoid Fever and Other Acute Infections.—WARFIELD T. LONGCOPE (*Bull. Ayer Clin. Laborat.*, Pennsylvania Hospital, No. 2, 1905).—The very careful and important work of Longcope on the changes of the bone marrow in infectious diseases will open a new field of study for many much discussed hematologic questions. Here, only the general results that he obtained can be outlined. In typhoid, the marrow shows constant and definite lesions, that closely resemble those going on in the mesenteric glands and spleen. They are characterized by the presence of many lymphoid cells, large phagocytes, and by foci of necrosis. There is present more or less hyperplasia of the blood-forming cells. In differential counts of the marrow cells constantly a marked relative increase of the lymphoid cells over the granular myelocytes was seen. In croupous pneumonia and several other acute pyogenic infections, the tissue showed also constant changes, differing widely from those found in typhoid. There was more or less marked hyperplasia of the blood forming cells with a pronounced relative increase of the granular myelocytes over the lymphoid cells. No foci of necrosis were found and no phagocytic cells. Bone marrow, in some cases of chronic nephritis, and one case of gall bladder carcinoma did not show any deviation from the normal condition. It is from these findings, as the author says, highly probable that the lesions of the bone marrow in typhoid and pneumonia are at least nearly related or directly responsible for the hypo- and hyperleucocytosis occurring in these conditions.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

Maternal Impressions.—J. PLAYFAIR McMURRICH (*Physician and Surgeon*, January, 1905).—The author gives in this article the status of the problem of maternal impressions in the light of most advanced scientific thought. After giving a short historical sketch and a very clear resume of the views of modern embryologists the writer concludes this most readable article as follows:

The position that we have reached then, is that while a belief in the view that emotional disturbances of the mother may affect the embryo is justifiable, the theory of maternal impressions, to the effect that maternal emotions may produce a definite and determinate abnormality corresponding to the emotion, is, to say the least, improbable. The grounds for this opinion are briefly as follows: (1) There is no definite relation between the occurrence of the cause and the effect. (2) The evidence of the theory is very largely *post factum*, and all attempts to obtain *ante factum* evidence have resulted negatively. (3) The supposed cause has acted in many cases at a time long subsequent to that at which the abnormality could have arisen. (4) No plausible means for the transmission of the cause to the embryo has as yet been discovered. (5) All abnormalities can be explained on the basis of known physical forces inhibiting or modifying the normal processes of development, and there is no reason for calling into existence an unknown psychical force. (6) The fact that the theory demands a definite and determinate response to the stimulus puts it quite out of harmony with the results of modern investigations into the causes of embryonic differentiation.

Treatment of Eclampsia by Parathyroidine.—VASALE (*Rivista crit. di Clin. Med. rev. Am. Jour. of Obstetr.*, May, 1905).—The writer describes a specially strong extract of the thyroid gland, prepared by the Institute for Sero-Therapy at Milan. He used it with success in three cases of eclampsia. He calls this extract parathyroidine or parathyreo-antitoxine, because it seems to have an antitoxic action against the still unknown cause of eclampsia of pregnancy. The effect on the convulsive seizures was most remarkable. The author inclines to accept as the cause of these convulsions a theory of the toxins resulting from changes in the thyroid body. He has used this extract in the case of a classic tetanus in a baby, with good result, and has treated three cases of epilepsy, with the effect in two of modifying the convulsions. The author prefers to withhold an opinion as to the efficacy of the extract in epilepsy.

The Spontaneous Rectification of Position of a Retrodeviated Uterus.—KLEINWAECHTER (*Zeitschr. f. Geb. u. Gyn.*, Vol. 54).—The writer observed in 376 cases of retroversion-flexion fifty-one times a spontaneous correction of the abnormal position. That a uterus may go back into

anteversion has been known, but the literature on the subject is meagre and practically no data were available as to the frequency of such an occurrence. The writer describes in detail the various forms and causes of retrodeviation and the factors which may lead to a spontaneous rectification of the faulty position.

Lack of Oxygen and Accumulation of Carbondioxid.—A. SCHUECKING (*Zentralbl. f. Gyn.*, No. 15, 1905).—Experiments made by the writer in the Physiologic Institute of Bern from 1897 to 1900 had proved two facts: firstly, that the automatic rhythmic respiratory movements of the living animal are evoked not, as was generally believed, by the lack of oxygen, but by the presence of carbonic acid; secondly, that not lack of oxygen but a pathologic accumulation of carbonic acid is responsible for the death from asphyxiation. These observations of the author have been ratified by other investigators. Experiments more recently made by Schuecking have demonstrated that in accordance with his claims that a normal amount of carbondioxid regulates, while an abnormal amount stops respiration, it is possible to revive asphyxiated dogs by means of intravenous injection of a solution of alkali-saccharate or alkali-fructosate. These experiments encouraged the author to use this method in six cases of deep asphyxiation of the newborn infant, all desperate cases in which he considered the fetal life lost. In four the therapy proved successful. In the last cases he used a 1 per cent. solution of natrium saccharate, 200 ccm. of which were injected into the umbilical vein. Natrium-fructosate should be used in a 2 per cent. solution which, however, must be prepared fresh.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

Umbilical Cord Hernia.—GRIFFITH (*Arch. of Pediatrics*, March, 1905) says that hernia at the cord in infancy may be of two forms. The common variety is the acquired form, in which a portion of the intestine pushes through the rectus muscle, carrying before it the peritoneum and the tissues of the skin. The second form is that known as congenital hernia, or hernia into the umbilical cord. This form is comparatively rare. This consists in the projection of a portion of the intestine, or even more of the abdominal viscera, through an opening at the navel. This opening is the result of arrest of development of the abdominal walls. The hernia may vary in size from that of a nut to that of an infant's head. The hernial sac appears to be formed of the distended umbilical cord, the walls consisting of peritoneum and amnion of the cord alone. The contents are intestines, with the addition of all or part of the liver, stomach, spleen or other organs. When these hernias are of small size, recovery may take place spontaneously with the removal of the cord. A reactive inflammation takes place around the borders of

the hernia with cicatrix formation. Until the introduction of the radical operation, most of the cases died, and even now the mortality is large.

The diagnosis is easy except in the cases of small cylindrical hernia into the cord. Here it is easy to overlook the condition and apply a ligature to the cord, which, of course, ligates the intestine as well. Every child born with that portion of the cord which is next to the body decidedly swollen, should be examined very carefully before a ligature is applied.

The treatment consists in the greatest care in handling, and the use of every possible antiseptic precaution. Small hernias can often be reduced easily. If this be done, an antiseptic compress should be applied, held in place with adhesive plaster. The child must not be lifted to an upright position until the wound has cicatrized, though this may take weeks. For the irreducible hernia the author thinks that the best plan of procedure is to do the radical operation as soon as possible after birth. After the operation the temperature of the child should be maintained, preferably, in an incubator.

Streptococcus Agglutination in Scarlet Fever.—DETOT and BOURCART (*Rev. Mens. de Mal. de l'Enf.*, February and March, 1905).—The study of a serum diagnostic in scarlet fever presents a double difficulty, for there is not only the question as to the inherent specificity of the streptococcus as such, and its relation to scarlet, but also the difficulty in determining the actual agglutination of this germ.

There is still a good deal of diversity of opinion with reference to the relation of the streptococcus to scarlet. The majority of observers today incline to the belief that, though the streptococcus plays an important role, it is in reality a secondary role, in that the streptococcus induces a secondary infection in scarlet. This question the authors did not attempt to settle, their object being merely to study the direct question of streptococcic agglutination.

Their cultures of streptococci were obtained both from scarlet fever patients and from other streptococcic infections, such as empyema, erysipelas, etc. The sera were obtained both from scarlet fever patients and from children with other infections. Control sera from healthy children were also used. For the details of the experiments (including complete descriptions of method and technique) the reader is referred to the original. The conclusions reached are as follows:

While it is unquestionable that the streptococcus can be agglutinated, the fact remains that the agglutination is not as easily demonstrated as is the case with the typhoid bacillus, for instance. In certain cases the macroscopic method proved itself more valuable than the microscopic.

Agglutination of streptococcus obtained from scarlet fever patients by scarlatinal serum may be clearly positive, but the reaction is variable and inconstant.

Any serum, either a normal serum or a serum obtained from cases other than scarlet, may have an agglutinative action on scarlatinal streptococci. This power is decidedly variable and inconstant, and in a comparative series of tests was ordinarily distinctly weaker than the power

of a scarlatinal serum; but in some cases this discrepancy was not apparent.

Analogous experiments made with non-scarlatinal streptococci gave approximately similar results.

As a result of their experiments the authors do not feel justified in drawing conclusions as to the practicability of serum diagnosis of scarlet. Nor do the experiments justify a conclusion as to the question of the specificity of the streptococcus in scarlet.

Acute Pyelitis in Infancy.—FREEMAN (*Arch. of Pediatrics*, March, 1905) calls attention to the fact that this disease is frequently overlooked on account of the absence of local symptoms. It is probable that infection in these cases occurs through the urethra. The organism most often found is *B. coli commun.*, so that the origin of the trouble is probably to be sought in primary lesion of the gastro-intestinal tract. As a matter of fact, many of the cases do follow intestinal disorders.

The clinical manifestations give no indications that the kidneys are the seat of the trouble. Irregular fever with remissions, often with chills and abnormal bowel movements, often form the clinical picture. The author reports a case of an infant of eight months running a course of twenty-two days, with high, irregular fever, digestive disturbance, and towards the end of the period, marked nervous symptoms, such as muscular twitchings and rigidity of the neck muscles. On the morning of the twenty-third day the author, who had seen the child for the first time the day before, made a urinary examination. The urine contained a large amount of pus, a few hyaline casts and a trace of albumen. Urotropin in half-grain doses was ordered. This medication was continued with intermission, on account of irregular heart action, for six days. Marked improvement occurred. At the end of this time citrate of potash was substituted for the urotropin. Thereafter the child continued to improve without remissions.

[In the discussion which followed the reading of this paper there was a consensus of opinion as to the importance of routine examination of the urine in very young children with continued high fever and digestive disturbance. Among other things Jacobi said: "If the urine is examined in every doubtful case, more cases of pyelitis or pyelonephritis will be found. I have not infrequently been called to see cases of protracted fever in which the unfortunate diagnosis had been made of malaria, and brief examination revealed either a pyelitis or a nephritis. This is a subject that is always being forgotten—that pyelitis is a disease frequently found in young infants. In every doubtful case, where there is fever, the urine should be carefully examined."—ED.]

ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

Compound Traumatic Separation of the Lower Epiphysis of the Femur — GILBERT GEOFFREY COTTAM, M. D., Rock Rapids, Iowa (*Med. Rec.*, April, 1905).—The danger to life in these cases accrues from shock, gangrene, and infection. Considerable shock would be expected in an accident of such magnitude; in a series of fifty cases collected by Mr. Poland, six deaths were attributed to shock. Gangrene occurs in the cases where the popliteal vessels are injured, and is seen in about 25 per cent. of the cases; here early amputation is necessary to save life. Infection is present, as a rule, as the wound is an open accidental wound; everything here depends on the surgeon's ability to control the progress of the infection. The author reports two cases, one five and a half years and the second seven weeks after the injury. The injury in both cases was received by having the leg caught in the spokes of a revolving buggy wheel. Both were boys, aged respectively six and five years. In neither case was there injury to the popliteal vessels. In each case the diaphysis of the femur protruded through a wound in the biceps femoris and skin to the extent of about five centimeters, and the bone was stripped of periosteum. Treatment consisted in enlarging and cleaning the wound, reducing the deformity—it was necessary to resect a portion of the diaphysis—wiring to hold the corrected position, and holding the limb on a double incline plane till union was established. In the case in which five and a half years had elapsed since the injury there developed a knock-knee due to the unequal growth of the sides of the diaphysis, which growth produced a "bowing." This is demonstrated by skiagrams. Both cases made good recoveries.

Report of Two Cases of Suppuration of the Retromesenteric Lymph Nodes.—JOHN C. PEGRAM, JR., M. D., Providence (*Amer. Jour. Ortho. Surg.*, April, 1905). The diagnosis of hip disease is ordinarily an easy matter. In the early stages when the disease is just commencing a positive diagnosis is not to be made, and the differential diagnosis must be well considered. We must wait and treat symptoms for a time till, by the non-disappearance of muscular spasm, night cries, sensitiveness, etc., we can make a positive diagnosis. The author reports two cases that came to him each of which presented enough of the classic symptoms of hip involvement to warrant a provisional diagnosis of hip disease. These cases were put to bed and treated as are acute hips, *i. e.*, by traction on the Bradford bed frame. Under this treatment the flexion subsided and the hips became less sensitive; however, the temperature remained above 100, and there appeared an abscess in the left iliac fossa in each case. These abscesses were opened; a large amount of green pus evacuated, which showed pure growth of the streptococcus. After a time both cases entirely recovered. It is the author's opinion that

here he was dealing with streptococcus infection of the retromesenteric lymph nodes.

Report of Two Cases of Congenital Dislocation of the Shoulder Joint.—FRANK E. PECKHAM, M. D., Providence (*Amer. Jour. Orth. Surg.*, April, 1905).—This condition is comparatively rare, and but few cases have been reported. There is some discussion as to whether or not the condition is truly a congenital dislocation or a result of birth injury. In both the cases here reported there was no sign of paralysis due to nerve injury. One case was carefully tested by electrical currents, and reactions were present in all the muscles. Skiagrams of both cases showed the heads of the humeri to be out of their sockets. The symptoms were that the children could not raise their arms to their mouths; the arms hung down, rotated so that the back of the hand faced forward. They were both operated upon, the Phelps operation being employed. The humeral heads were returned to the glenoid cavities and the capsules of the joints stitched over them. The result was that the arms could be raised to the mouths. There seemed still to be considerable weakness, but this is disappearing. There seems to be no reason for this lack of muscular power. The author is of the opinion that open operation is not always necessary in these cases, that equally good results might be obtained by simple reduction and retention.

Notes on the Treatment of Torticollis.—G. HOHMANN, Munich (*Zeit. f. ortho. chir.*, Band xiii., Heft 1).—In women the location of the scar of operation is of sufficient importance to be considered. Located near the clavicle, it is liable to be seen, and thus be the cause of embarrassment. Lange has done many operations by dividing the muscle at its origin on the mastoid process through a small incision. The scar here falls behind the ear and is covered by the hair. All tight bands are divided; the head is overcorrected and placed in a plaster of Paris bandage for two weeks, then the position is held for a time by celluloid fixation appliance.

The Valgus Position of the Foot.—C. HUBSCHER, Basel (*Zeit. f. ortho. chir.*, Band xiii., Heft 1).—Habitual pronation at the ankle joint is the cause, except in traumatic cases, of the valgus position, and the valgus position is the forerunner of the flat foot. The foot in the pronated position is out of the line of weight bearing; the cause of this pronation is insufficiency of the supinators, and this insufficiency results in turn from changes in the relation of body weight and the development of muscles, general constitutional weakness, or local weakness. The power of the flexor hallucis longus may be taken as an index of this insufficiency. In examining patients who complain of foot trouble it is well to have them stand on a table, and by the use of the plumb line determine the amount of valgus position. The plumb line will give the pronation angle; this should be corrected by a sole raised on the inside which will throw the foot into a corresponding degree of supination.

Apparatus for Correcting the Equinus in Clubfoot.—SCHULTZE, Duisberg (*Zeit. f. ortho. chir.*, Band xiii., Heft 3).—This very simple little

apparatus consists of two small boards with a hinge. Supination being corrected, the foot is placed between the boards with the heel toward the hinge, sole against the upright board, back of leg against the lower. The upper is now forced toward the lower board and the foot thus forced into a position of calcaneus, where it may be secured.

Three Cases of Double Hip Dislocation, Supplemented by a Report of Seven Cases Operated on by Professor Lorenz.—A. J. STEELE, M. D., St. Louis (*Amer. Jour. Ortho. Surg.*, April, 1905).—The first case was one of double congenital dislocation in a girl aged seven. The child was brought to St. Louis from New Mexico in order that she might come under the treatment of Lorenz. She was a muscular child and presented such characteristic deformity that Lorenz used her at his clinic to show the typical walk, lordosis, etc. He did not attempt to reduce her hips, however, as the case seemed too hard. He advised traction and division of the adductors before attempting the reduction. This Dr. Steele did, and also reduced the hips, and reports an anatomical cure, verified by skiagrams. Case two was a case of double congenital dislocation with stable joints. X-ray showed new acetabula above the rudimentary normal ones. The case presented marked adduction deformity, which did not respond to division of the adductors and forcible abduction. Double Ghant osteotomy was done, and the lower fragments abducted. Result was non-union. It was necessary, then, to wire the bones, which was done with good functional results. Case three was a woman of forty-three years. Her right hip was displaced three years, and her left hip two years previously, without traumatism. The hips could be reduced without an anæsthetic. He made a pelvic belt for this woman, the belt having buttresses over the trochanters and being held down by perineal straps. The hips being reduced this belt is applied, the hope being to retain the femora in the acetabula. The result remains to be seen. Lorenz operated upon seven cases in St. Louis, three double cases, four single cases. Dr. Steele reports these in detail; his summary is as follows: Of the ten hips operated upon six have anterior displacements, two are in dorsal position, and two (same patient treated by Dr. Mueller), “are not in anatomic reposition.”

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

The Curability of Early Paresis.—DANA (*Jour. American Medical Assn.*)—This paper of Dana's is sure to excite considerable comment. Its chief thesis, in the words of the author, is to present convincing evidence that paresis in its very earliest stages—in the stage which may be called *præparesis*, is a disease that sometimes can be arrested. This arrest may be permanent and may be attended with so little mental defect that one may call the patient practically cured. Certain histories are given to support

these statements; some of them do not present the full fledged picture of paresis but present a clinical picture of those cases which are seen to develop a fully developed case of paresis later. The evident lesson of these histories is that it is of supreme importance to recognize a paresis before it becomes a real paresis. The treatment is in the main such a modification of the regular antisiphilitic treatment that can be readily adapted in any one's practice. The important thing is to remember that such a state exists in paresis and to be prepared to know it and to give the proper sort of treatment before it is too late.

The Nervous Diseases of School Children.—MEYER (*Berl. Klin. Wochs.*, No. 17, 1905).—This is an interesting question from the point of view of one who has had exceptional opportunities to observe the frequency with which school children are affected with nervous affections. Eighteen hundred and fifty-seven children were so examined with the result that 130 were found to be affected, that is 7 per cent. In a material of 1,068 children, who had not attended school, 2.6 per cent. were found to be nervous. The author believes that the chief cause of the development of nervous diseases in school children, is to be found in an inherited tendency to which the school acts as an active awakening to this congenital defect.

Hysterical Mutismus in Connection with Hysterical Asthma Following Trauma.—STINTZING (*Deut. Zeit. F. Nervenheilkunde*, Band 28, No. 2 to 4).—Hysterical mutism is a somewhat rare variety of hysterical symptom and such cases ought to be placed in evidence when possible. This case relates to a woman twenty-nine years of age. The asthmatic attack followed a trauma. The speech defect was readily recognized, chiefly on account of its absolute completeness, without any other accompanying symptoms which a cerebral process so extensive would produce. Furthermore, the result of suggestive treatment made the hysterical cause of the symptoms evident.

The Location Within the Spinal Cord of the Fibers for Temperature and Pain Sensations.—SPILLER (*Journal Nerv. Ment. Diseases*, May, 1905).—Many believe that the tracts of Gowers may contain the fibers for the sensations of pain and temperature, but evidence supporting those opinions has been sadly deficient. A man twenty-three years of age began to have pain in the lumbar region four months before he came under observation. Numbness was soon felt in the feet and gradually involved the lower limbs below the knees. Sensation for pain was almost abolished and sensation for temperature was diminished. At the autopsy, tuberculous meningitis and caries of the vertebrae were found, and a small tubercle was present in the right lateral column, at the extreme lower end of the thoracic cord involving the area of Gower's tract.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

A New Method for Righting Cystoscopic Images.—DENIS (*Ann. des Mal. des Org. Urin.*, April 1, 1905).—A piece of rough glass with the polished side covered with black varnish, except a circle corresponding to the field of the cystoscope, is employed. The circle is transversed in its antero-posterior diameter by a red line, with the red line parallel to the sagittal plane of the patient, the cystoscopic image is drawn with a pencil upon the rough side of the circle, care being taken to note the position of the index of the instrument and to trace a diameter on the circle corresponding to the situation of this index. With that done, it suffices then to turn the glass disk over and to pivot it about itself sufficiently for this index diameter to become parallel to the sagittal plane of the patient in order to have by transparency the exact reproduction of that which exists in the bladder.

The Position of the Kidney After Nephropexy.—GOELET (*Amer. Jour. Urol.*, April, 1905).—The contention that the position of the kidney after nephropexy is unimportant is an error. Fixation, without restoration to its normal position certainly does not facilitate restoration to normal action of the kidney, already crippled in consequence of displacement. It neither remedies the interference with its circulation and function coincident with the prolapse, nor does it afford entire relief of the symptoms. It is not the mobility of the kidney that causes disturbance, but its exaggerated downward displacement. On the contrary, fixation of the kidney lower than normal is more objectionable than mobility, for it is then in position where it will be compressed by the corsets or clothing constricting the waist and cannot escape as before. A kidney fixed in a low position cannot have any beneficial effect upon the associated nephritis. It is both undesirable and unnecessary to split or peel off the fibrous capsule. Restoration of the kidney to its normal position is sufficient to overcome the associated nephritis in these cases, due to the prolapse, provided permanent fixation is secured.

The unusually low position of the kidney results in congestion and inflammation, because the circulation is retarded in consequence of the lengthening and narrowing of the vessels supplying the organ and the necessary upward direction of the blood current in veins adapted to act normally on the level, and because there is interference with the outflow of the urine, which permits it to accumulate in the pelvis. The author reports 184 consecutive successful nephropexies. In his method of operating a verticle incision is made from the twelfth rib downward along the outer border of the erector spinæ muscle. The kidney is delivered through this incision, and the surrounding fat all around and the attached colon are completely detached, exposing the entire kidney. Sutures of silk worm gut, two in number, are inserted under the fibrous capsule only, one at the center of the kidney and the other midway be-

tween this and the lower pole. The kidney is then replaced and the suture ends are carried from within out and brought out upon the surface of the back at the upper angle of the incision, just below the twelfth rib, and are tied over a fold of gauze to prevent the sutures from cutting into the skin and consequent loosening of the loop. These sutures are retained in position until the patient is ready to get up, three weeks after the operation.

Diagnosis and Treatment of Tuberculosis of the Kidneys.—CASPAR (*Amer. Jour. Urol.*, November, 1904).—Kidney tuberculosis is as a rule primary, of hematogenous origin. Phthisis of the genital organs must be separated from that of the urinary tract. *Genital* tuberculosis begins in the epididymis, prostate or seminal vesicles and extends from here to the bladder. Tuberculosis of the *urinary* tract begins in the kidneys and at times descends to the bladder. By metastasis, foci from the sexual organs could be conveyed to the kidneys, and inversely those from the kidneys could be transplanted to the genital organs. It happens only exceptionally that the tubercular process ascends from the bladder into the kidneys. In numerous cases of tuberculosis of the kidneys, which have extended to the bladder, the second kidney remains free of tuberculosis, and it is conclusively proven that renal tuberculosis almost always *begins* unilaterally. In renal tuberculosis colicky pains, due to temporary occlusion of the urinary passages occur, which much resemble the colics observed with renal calculi. It is only in the late and far advanced cases that the patient's general appearance serves us as a guide. The urinary changes consist of the presence of pus, blood, microscopically or macroscopically visible, casts, albumen, epithelia. Pus cells are hardly ever absent. For those cases in which tubercle bacilli cannot be found, we must bear in mind that the absence of all bacteria in cystitic urine is most suspicious. A certain importance may be attached to culture experiments upon ordinary nutrient media with urine from the bladder which has been taken by means of a sterile catheter. If the urine is tuberculous, nothing unusual grows. For absolute proof inoculation of the guinea pig, intra-peritoneally or subcutaneously, must be employed. Tuberculin reaction cannot take the place of inoculation, for it has been proven that the large majority of persons have tuberculous foci somewhere in the body without being tuberculous. That tubercle bacilli may be excreted through non-tuberculous kidneys does not hold, as it is only true if the patient is in an advanced stage of phthisis. As to whether the kidney or bladder is the seat of tuberculosis, we must not forget that in cases of pure tuberculosis of the *urinary* tract, in which the *genital* tract is sound, we usually have to deal with primary renal tuberculosis. When we come to decide which kidney is the seat of disease, the subjective symptoms of the patient help us to a certain extent. Renal palpation should not be lost sight of, but we dare not ascribe more to it than it offers, for some tubercular kidneys may be small and others, even though enlarged, not palpable. Nor does an enlarged kidney necessarily mean a diseased kidney; indeed it may be the relatively healthy one representing compensatory hypertrophy.

The cystoscope does not always present specific pictures in cases of

tuberculosis. There exists a cystitis and pyelitis granulosa which much resembles tubercular nodules. The ureter catheter is the most rapid and at the same time the most certain aid to diagnosis. The methods of refinement that we have for testing the functional capacity of the kidneys complete the finishing touches.

Inoperable cases usually die rapidly in the course of a few years. Those of renal tuberculosis, which might be, but are not operated upon, have a bad future. In the majority of cases the disease progresses in the organ itself, then leads to metastasis and finally extends, by continuity, to the ureters and the bladder. While this generally obtains, yet exceptionally the process may even be arrested.

The question of operation is difficult to determine in those cases with great weakness, fever and a very bad general condition. However, if there are only the expression of the localized renal tuberculosis, the operation is demanded. Diabetes, pronounced arterio-sclerosis, particularly of the coronary arteries, are contra-indications. A prerequisite for success is a good cardiac strength, together with a good kidney on the other side.

Statistics justify us in the gratifying hope that the more ureterocatherism and functional renal diagnosis obtain an entrance into the circle of physicians, the greater will be the prospect in the fight against renal tuberculosis, the greater the number of these sufferers we shall be able to save.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

On the Treatment of Tuberculosis of the Larynx with Phenosalyl.—DEMPEL (*Therapeutische Monatshefte*, April, 1905) reports his experience with phenosalyl (a combination of carbolic acid, salicylic acid, benzoic acid, citric acid, glycerine and etherial oils) in the treatment of laryngeal tuberculosis. Forty-six cases were treated by making direct applications of a three per cent. solution of the phenosalyl to the lesions in the larynx after cocaineizing the larynx. In some of the cases the lesions readily healed after three to five applications, while in others the applications were made daily for a month or two. Little or no effect was obtained where there was much swelling and infiltration about the arytenoids, and the deeper the ulceration the more uncertain he found the effect to be. In some of the cases the hoarseness disappeared entirely and the lesions in the larynx healed entirely, but the lung condition became progressively worse and the patients finally succumbed with a normal larynx. All in all the author believes phenosalyl to be a very valuable remedy in laryngeal tuberculosis. He reports in detail eight cases in which a complete cure of the laryngeal lesions were obtained.

Opening of Peritonsillar Abscesses.—THOMPSON (*British Medical*, March 25, 1905) gives the following rules for opening a peritonsillar abscess:

The site of election for opening the abscess is just external to the intersection of an imaginary line across the base of the uvula and another vertically along the anterior faucial pillar. The best instrument with which to open the abscess cavity is a pair of Lister's sinus forceps or a modification of the instrument as devised by the author. The blades are forced into the cavity and then opened widely and withdrawn, thus producing a vertical opening through which the pus escapes into the mouth. There is no risk of wounding any of the large vessels with this instrument.

Report on the Use of Stovaine.—C. G. COAKLEY (*Medical News*, April 15, 1905).—After briefly giving the properties of stovaine the author sums up his experience with this anesthetic in operations on the nose and throat as follows:

1. That stovaine as a local anesthetic is apparently equal to cocaine.
2. That the time necessary for acquiring local anesthesia is that of cocaine.

3. That it apparently does not contract the nasal mucous membrane to so great an extent as do similar solutions of cocaine. This is at times a disadvantage when the nasal passages are desired to be opened for more thorough inspection of the cavities; on the other hand, it is often times an advantage, as in snaring off redundant tissue by not too greatly shrinking it, and therefore making it more easy to remove.

4. Stovaine does not produce nearly so great a sense of constriction in the pharynx as that which is produced by cocaine. In this respect it has a decided advantage over cocaine, especially in those patients to whom the symptoms of constriction with constant desire to hawk and remove a supposed foreign body is very distressing.

5. Solutions of stovaine have a peculiar odor of fish, which has been annoying to some patients.

6. Some of the patients have complained that solutions of stovaine are more bitter than similar solutions of cocaine.

7. We have seen no toxic effects following the use of stovaine; there have been no secondary headaches or feeling of lassitude after the local anesthetic effect of the drug has disappeared. I am also of the opinion that the secondary swelling of the mucous membrane following the use of stovaine, is less than that which occurs when cocaine is employed.

8. It is but fair to say that during this period when cocaine was employed there was no case of marked cocaineism. (For the sake of comparison in all cases where there were two operations done on the same person, stovaine was used on the one side and cocaine solutions of the same strength were employed on the other. Careful questions were asked of each patient to determine which was the better anesthetic and which gave the least disagreeable symptoms.)

Foreign Body in Larynx.—HODLMOSER (*Wiener Klinische Wochenschrift*, No. 13).—The author reports a case of a foreign body in the larynx in a boy eight years of age. There was no disturbance in the breathing until four days after the aspiration of the foreign body. The writer did not see the case until two days later, when the breathing had become very stenotic. An examination of the larynx was attempted, but owing to

the peculiar shape of the epiglottis a good view of the larynx could not be obtained. The arytenoids were found to be very much swollen and a foreign body could be seen lodged between the vocal cords. A triangular piece of bone whose sides measured about 18 mm. was removed with a Schroetter laryngeal forceps without the use of a local or general anesthetic. The case is interesting from the fact that a foreign body of that size could remain in the larynx for so long a time without producing any disturbance in so young a child. The author reviews briefly some of the cases of foreign bodies in the larynx reported by Schroetter, in which the foreign bodies had remained in the larynx as long as three or four months.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

MARTIN F. ENGMAN, M. D.

Syphilis as Related to the Problems of Longevity.—JAMES NEVINS HYDE (*Medicine*, April, 1905).—The author concludes that (1) syphilis, like unmodified variola and tuberculosis, may destroy life. In its gravest expression, when not destructive of life, it may disfigure and mutilate the human body to a formidable extent. The disease should be counted among the dangerous scourges of the human family. Once in the presence of infection, neither physician nor patient can afford to neglect skilful, energetic and prolonged treatment, with a view to setting aside the possibilities of future danger. (2) In the case of inherited syphilis, the fatality, working destruction alike of ovum, fetus and infant, varies between 80 and 90 per cent. of the infected. The mortality, exceeding that resulting from any of the great plagues of the human race, is due to the unprotected condition of the embryo. (3) By reason of the absence of trustworthy statistics, the percentage of fatality in acquired syphilis, where the germ of the disease is implanted upon a previously sound organism, cannot be accurately determined. Estimates based upon clinical records furnished in the larger cities of the United States, coupled with the facts detailed in the volumes of vital statistics published by the United States census bureau, make it appear probable that the fatality in such acquired disease is represented by less than 2 per cent. (4) The fatality in acquired syphilis results less often from the active invasion of the disease than from the entailed loss of resistance, by reason of which common agencies of disease produce serious effects, especially in the nervous system. (5) The efficient factors in the production of these effects are fairly well understood. They include chronic alcoholism, long-continued tobacco-narcosis, extreme fatigue, severe affliction, the malnutrition that may result from poverty and the stress and strain endured by the nervous centers in the anxieties of business. (6) In the absence of these efficient factors in the production of the grave condition which may follow syphilis, the skilful management of that disease may terminate with brilliant results in from 75 to 80 per cent. of acquired cases. (7) The damage wrought by syphilis

is not to be measured solely by its lethal issues, though these are of chief concern to the life insurance actuary. The lowering of the standard of average health wrought by the inroads of the malady, often appreciable in the skin, bones, testes, liver and other organs, and the moral results of the acquisition of a disease popularly described as "loathsome," may jeopardize the best play of the body functions, pave the way for the inroads of other toxins, and possibly lay the foundation for mental degeneration, alienation and even suicide. (8) The expectation of life after the acquisition of syphilis is based in part only upon the tendencies of the morbid process. Such expectation is, in large measure, affected by the inherited tendencies, the habits of life and the environments of the individual. The longevity prospects are unquestionably better for women than for men by reason of the relative placidity of existence of the former.

Some Dermatologic X-Ray Abuses.—M. L. HEIDINGSFELD (*The Lancet-Clinic*, April 15, 1905).—The author reports sixteen cases, these cases having been selected from a larger class of similar experiences chiefly because they are especially adapted for this practical demonstration by reason of their careful photographic record. Briefly summarized, his conclusions are as follows: (1) The x-ray is not an infallibly reliable therapeutic agent in epithelioma, sarcoma and lupus vulgaris. (2) Procrastination, from its use, is often attended with irreparable harm. (3) The prolonged or careless use of the x-ray can be productive of epithelioma. (4) The use of the knife or well adapted pastes in selected cases of epithelioma is preferable to the x-ray in point of prompt and efficacious result. (5) In lupus vulgaris the x-ray possesses decidedly secondary powers to ultra-violet light. The x-ray may effect an early partial improvement or even a complete cure, but its persistent use is almost invariably followed by unfavorable reaction. (6) In alopecia areata the x-ray has not only failed to promote the return of the hair, but has induced permanent baldness. (7) The indiscriminate use of the x-ray as a cure-all tends to obtund the diagnostic perception and to place an inferior value on the higher keenness of attributes and loftier attainments of an advanced and discriminating medical knowledge.

Lichen Pilaris, seu Spinulosus.—H. G. ADAMSON (*The British Journal of Dermatology*, February and March, 1905).—Under the name of lichen spinulosus there is well known in England an affection of the skin occurring in children, and usually in boys, which is characterized by the appearance of fine filiform spines arranged in groups, more or less symmetrically, distributed over the trunk and limbs. The filiform spines arise from pilo-sebaceous follicles, the mouths of which follicles are slightly raised to form pin-head-sized papules, either of the normal color of the skin or slightly red. They are unaccompanied by itching or other subjective sensations, and there is little or no disturbance of the general health. Similar cases have been observed in France, although there the affection is not so well known and it is apparently not recognized as a distinct entity. The cases recorded in France have been described under different names. The acne cornee of Hardy and of Leloir and Vidal, and possibly also of Guibout, is the same disorder, but the cases of

acne corneae observed by Hallopeau, with the exception of one case, viz., acne corneae en aires, do not quite correspond to cases of lichen spinulosus seen in England. Other cases have been published by Barbe as examples of keratose folliculaire (*Type de Brooke*) and just recently a case by Audry under the title keratose pileuse engainante. In addition to the typical cases of lichen spinulosus in children, where the spiny lesions constitute the whole eruption, there are other cases in which such lesions are associated with an eruption of lichen planus. Although this association may occur rarely in children, it is more common in adults. In adults, indeed, the occurrence of the spiny lesions seems to be usually, if not invariably, associated with lichen planus. This fact would seem at first to suggest some etiological connection between the two affections, lichen spinulosus and lichen planus; but further consideration shows that the purely spinous cases of children are without the subjective sensation of itching, while those cases associated with lichen planus do usually present this symptom. Moreover, the spiny lesions in these latter cases are usually associated with the acuminate follicular lesions of lichen planus, and it is most probable that they have, therefore, merely an accidental association with a perifollicular disturbance. Such an hypothesis is made more probable by the fact that similar spines are occasionally associated with the follicular lesions of lichen scrofulosorum and miliary syphilide, and also with those of pityriasis rubra pilaris. Histologically, the lesions of lichen spinulosus in children show that the pathological process is essentially a hyperkeratosis of follicle; perifollicular inflammation is absent, or at any rate very little marked.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

Some Remarks on Molluscum Contagiosum.—E. H. OPPENHEIMER (*Ophthalmology*, April, 1905).—Dr. Oppenheimer points out a few clinical features of molluscum contagiosum seldom mentioned in the text books on Diseases of the Eye. The statement that molluscum chooses the lids as the seat of predilection is not borne out by the author's experience or that of colleagues in Berlin. In Vienna and Frankfort, however, the disease is apparently more frequent, which may be accounted for by supposing that molluscum, like trachoma, shows certain geographical tendencies. As to size the molluscum growths vary from that of a pinhead to that of a small pea. In the text books they are invariably described as of the size of a pea.

Oppenheimer describes a case in a child of four who was sent to him with the request to remove the "warts." The tumors had a broad base and were generally of the same color as the rest of the skin. They varied in size from less than a pinhead to that of a small pea. They all presented a small pit, covered by thin tissue. Pressure with a small forceps caused a soft lump to escape from each tumor which, on micro-

seopical examination, was found to possess typical molluscum structure. Most of the growths were clustered round the tear sack, where they made the impression of an eczema.

Treatment advised is expression of the contents of the mollusca with a small forceps and covering the eczematous parts with xeroform.

Ulcerating Syphilide of the Cornea.—ANTONELLI (*Soc. d'Ophthalm. de Paris*. Session January 10, 1905).—Antonelli exhibited a wax model of the corneal lesions observed in an elderly man. The cornea was generally infiltrated and presented an appearance similar to that found in parenchymatous keratitis, except that ulcers were observed near the limbus. Erosions at the palpebral commissures and mucous plaques in the mouth were noted. The eye was soft and sightless. Cicatrization of the lesion was effected by specific treatment. The condition was regarded as an "ulcerating syphilide of the cornea."

Metastatic Choroiditis with Perforation of the Sclera and Subconjunctival Abscess. Origin of Suppuration Revealed by Microscopic Examination of the Pus.—CHAILLOUS (*Soc. d'Ophthalm. de Paris*. Session February, 1905).—The case presented many of the signs of orbital suppuration. Ophthalmoscopic examination was impossible owing to haziness of the media. From a little opening in the outer part of the edematous conjunctiva pus was seen to issue. Microscopical examination disclosed the presence of streptococci and choroidal pigment. The diagnosis of a metastatic choroiditis with perforation of the sclera was thus established.

Conjunctivitis Petrificans.—W. C. POSEY (*Annals of Ophthalm.*, April, 1905).—A colored adult female came under observation for recurrent attacks of inflammation of the eyes. The complaint was of "burning, itching, and a foreign body sensation." Examination revealed the presence of numerous yellowish white areas slightly raised above the conjunctiva, but beneath the epithelium. The plaques were situated for the most part in the tarsal conjunctiva of the upper lid. Between the spots the conjunctiva was red and swollen. A slight ring of opacity encircled the cornea and a superficial vascular opacity occupied the lower portion. There was no pain and very little discharge.

The writer reviews Leber's original description presented to the Ophthalmological Society of Heidelberg in 1895. The coalescence of the smaller spots into larger plaques is brought about by recurrent attacks. Although confined at first to the tarsal conjunctiva the disease tends later to spread to all portions and to involve the deeper tissues. Corneal ulceration occasioned by the constant rubbing of the chalk-like masses is a late complication.

The etiology of the disease is unknown, though Leber suspected a bacterial origin. Chemically, the deposits have been found to consist of various salts of lime. Treatment is, of course, concerned with the mechanical removal of the masses and the use of antiseptic washes.

BOOK REVIEWS.

THE STUDENT'S HANDBOOK OF SURGICAL OPERATIONS. By SIR FREDERICK TREVES. New edition revised by the author and Jonathan Hutchinson. W. T. Keener & Co., Chicago. 1904. Price, \$2.50.

This book is intended for students who are preparing for a final examination or who need a guide in learning surgical operations on the cadaver. It is really an abridgement of the author's well known work on this subject. Everything has been omitted which has not a direct bearing on the most useful operations.

SURGICAL EMERGENCIES, THE SURGERY OF THE ABDOMEN. Part I, Appendicitis and Other Diseases About the Appendix. By BAYARD Holmes. D. Appleton & Co., New York. 1904.

This pocket-sized edition of 350 pages from the pen of a well known Chicago surgeon is replete with well made illustrations and interesting personal experiences. At the same time the general considerations of the subject are touched upon, while the pathology, both gross and minute, come in for a share of the author's attention. After devoting 241 pages to appendicitis, Holmes successively takes up the study of peritonitis, perforated typhoid ulcer, carcinoma of the intestinal tract, etc. One of the most interesting things about the little book is the division consisting of four pages given to adages. This must, of course, be read in the original to be appreciated.

DIE BEGUTACHTUNG DER UNFALLVERLETZUNGEN. DR. EDUARD PIETZKOWSKI. ALLGEMEINER THEIL. Berlin, W. 35. Fischer's Medicin. Buchhandlung. H. Kornfeld.

This book of 237 pages deals with the subject in hand with the characteristic thoroughness of the German student. The fact that the author is a teacher of medicine in the University of Prague is a sufficient guarantee that he is master of his subject. There is a full consideration of the laws of Austria, Switzerland and Germany.

BERICHT UEBER 137 GALLENSTEINLAPAROTOMIEN AUS DEM LETZTEN JAHRE. Von DR. HANS KEHR. Munchen, J. F. Lehmann's Verlag. 1905. \$1.25.

One must necessarily give more than passing attention to this work of 315 pages from the pen of the leading German authority on gall stone disease, especially when this embraces a number of his operative experiences. However, the book does more than this; it treats, as well, cases that came under his observation and were not operated upon. During that time more than 300 gall stone patients were examined, which is in itself an evidence that the author does not consider all gall stone diseases as operable. The various general points of interest touched upon are illustrated by satisfactory case histories. Of course, a review is inadequate to do such a work justice. Each case history must be read to be appreciated.

MAGEE AND JOHNSONS EPITOME OF SURGERY. A Manual for Students and Practitioners. By M. D'ARCY MAGEE. In one volume of 295 pages, with 129 engravings. Cloth, \$1.00 net. Lea Bros. & Co., Philadelphia and New York. 1904.

This little work is not intended as a general text book: it is more for students to use in quizzing. It will prove a great aid in preparing for examinations. It is nicely illus-

trated, and contains all of the simpler surgical material of value to the student. It may be added that it is strictly up to date.

MANUAL OF OPERATIVE SURGERY. By JOHN FAIRBAIRNE BINNIE, A. M., C. M. (Aberdeen). With 559 illustrations, a number of which are printed in colors. P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia. 1905.

This is, in external appearance, the handsomest little volume which has recently appeared on surgery. It contains 644 pages, the paper being of a fine quality and the print of the finest. The illustrations, while necessarily small, to conform to the size of the page, are exceptionally clear and well reproduced. The author's selective ability is especially to be commended, since this little volume impresses the very best of the newer principles laid down by such pioneers of American surgery as Mayo Brothers and Ochsner and others who have worked along the same advanced lines. Older works of surgery have stuck too closely to the beaten track, and in large measures simply reproduced what had gone before. This has been happily avoided by Dr. Binnie. Happily, such routine matters as amputation and ligatures have been omitted, at the same time many special fields of surgery were omitted for the reason that each special work treated on them. The author has used rare good judgment in placing in the surgeon's hands the most up-to-date little volume which has appeared.

CHIRURGIE DE L'APPAREIL GENITAL DE LA FEMME. PAR R. PROUST. 230 figures dans le text. Paris: Masson et Cie. editeurs. 1904. Price, \$1.—

There does not exist to our knowledge another manual of this size which gives in the same concise and systematic form so complete a survey of modern operative gynecology. Precision of expression in the text, and unusual clearness of 230 well selected illustrations, enabled the writer to embody in this little volume of 260 pages not only a description of almost all the better known gynecological operations, but also short historical sketches of the gradual development of all the standard operations.

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS. Comprising ten volumes of the year's progress in medicine and surgery. Issued monthly. Under the general editorial charge of GUSTAVUS P. HEAD, M. D., Professor of Rhinology, Chicago Post Graduate School. Vol. II, General Surgery, edited by John B. Murphy, M. D., Professor of Surgery, Northwestern University Medical School. Series 1905. The Year Book Co., Publishers, 40 Dearborn street, Chicago.

The principal object in publishing this series was that the general practitioner might have the best of the year's material placed at his disposal in a convenient form. Still, the separate subjects are written up in separate volumes. The volume under discussion has 545 pages, and is a worthy successor to those which have gone before.

ASTHMA IN ITS RELATION TO THE NOSE. By ALEXANDER FRANCIS, M. B., B. C. Cantb. Publishers, Adlard and Son, Bartholomew Close, London.

In this little monograph on asthma and its relations to the nose the author clearly defines his views. He believes the ordinary classification to be faulty and misleading. In his opinion asthma is due to a spasm of the bronchial muscles, which spasm is probably always induced by reflex action. Clinical data of four hundred and two cases are appended, making this an interesting contribution to the literature on asthma in its relation to the nose.

DIFFERENTIAL DIAGNOSIS OF SYPHILITIC AND NON-SYPHILITIC AFFECTIONS OF THE SKIN, INCLUDING TROPICAL DISEASES; for Practitioners and Students of Medicine. By GEO. PERNET. Adlard & Son, London. 1904.

The reviewer does not know of any book that fits so nicely in the present requirements as this one. Such a fact has no doubt appealed to any one frequently called upon to make a differential diagnosis of those diseases of the skin which so closely resemble syphilis. Dr. Pernet in this little volume has covered the ground most thoroughly, going into the minutest details of the various eruptions which might simulate syphilis. Particularly does the reviewer notice, as an example, the differential diagnosis between pityriasis rosea and syphilitic roseola. Here are pointed out objective symptoms of great assistance in making the diagnosis. Lately the reviewer has been frequently called upon to make a differential diagnosis between these two conditions and each time he has been greatly puzzled and in some cases could only await further developments to perfect the diagnosis. He heartily recommends the volume to those interested in the subject.

DIAGNOSIS AND THERAPY OF ECZEMA. First part, Diagnosis. By DR. JESSNER. A. Stuber's Verlag, Wuerzburg.

This is one of the issues of Dr. Jessner's dermatological "Vorträge fuer Praktiker" and is a highly practical and clear presentation of the subject.

THE MODERN MASTOID OPERATION. By FREDERICK WHITING, A. M., M. D., Professor of Otology, Cornell University Medical College; Aural Surgeon to the New York Eye and Ear Infirmary, etc., illustrated by twenty-five half-tone and twenty-three key plates, made from original drawings. Philadelphia: P. Blakiston's Son & Co. 1905. Price, \$6.

This handsomely illustrated work on the modern mastoid operation begins with a historical review of the development of mastoid surgery. Special stress is laid upon the Wilde's incision, the author affirming that whenever a Wilde's incision is indicated a mastoid operation is imperative. The Schwartze operation is also given special prominence. The body of the work is devoted to the "complete mastoid operation" as performed in the author's clinic at the New York Eye and Ear Infirmary. The complete operation differs in two important details from the commonly accepted procedure for mastoid conditions, in that an incision is made at right angle to the ordinary incision, thus making two flaps, which allow a comprehensive view of the field of operation. The second difference is in the routine removal of the tip of the mastoid, the pneumatic cells and diploic spaces at the root of the zygoma. A chapter is devoted to each of the various operative steps, which are given in the minutest detail from the initial incision to the post-operative care of the patient. Forty-eight beautiful illustrations accompany the text.

DIE WOCHENSTUBE IN DER KUNST. Eine kulturhistorische Studie. Von DR. ROBERT MUELLERHEIM. Mit 138 in den Text gedruckten Abbildungen. Verlag von Ferdinand Enke, Stuttgart, 1904. Price, Mks. 16.

By far the most reliable source for the study of the customs and habits of past times is offered in good pictures. Historical essays, chronicles or occasional accounts in epos or novel may at times prove of considerable value, but, as a rule, descriptions given in such places leave too much to the imagination of the interpreter.

In the last few years several attempts have been made to gain a more satisfactory conception of the manner in which medicine was practiced in the old and middle ages. The book before us is a most notable contribution to these studies. On the hand of pictures, etchings and sculptures, which comprise marble reliefs found in Rome and the

works of such men as Rubens, Murillo, Corregio, Brueghel, Duerer, Holbein, Hals and many others, the author speaks in a most instructive, and at times fascinating way, of the life in the lying-in chamber. He describes the mother's bed, the confinement chairs, the care of mother and infant, the new born's dress and nourishment. The chapters dealing with superstition, with popular and scientific views pertaining to the puerperal state are full of the most interesting references.

Not a small part of the value of this volume is dependent upon the 138 excellent half-tones which are printed on heavy glossy paper. The make-up of the book is artistic and fully up to the standard of the work that we are accustomed to see from this publishing house, which has made the publishing of such art volumes a sort of specialty.

KRANKHEITEN UND EHE. Herausgegeben von PROFESSOR DR. H. SENATOR UND DR. S. KAMINER. New York: Rebman Co., 10 W. 23d street.

The purpose of this volume is clearly set forth in a splendidly written introductory article by Senator, the well known clinician of Berlin.

Religion and legislation of the oldest times have attempted to regulate marriage from the moral and legal point of view. Practically no attention was paid to the question of the bodily fitness or unfitness of those entering the married state. Even the Mosaic laws, which excel in their consideration of the hygienic aspects of sexual life, refer to this question only in so far as they give certain rules regarding intermarriage. The one great purpose of married life, up to comparatively recent times, was the procreation of children. But probably with the only exception of the custom of Sparta, to destroy weak infants, practically nothing was done to secure a healthy and strong offspring.

To-day the importance of marriage in the general hygiene, and in the preservation of the vigor and valor of a race is well recognized. There are chiefly three problems which demand the full attention of modern medicine, namely, the married state as the cause of disease, the direct transmission of certain diseases from husband to wife, or vice versa, and, finally, the influence of a disease of one of the parents or of both upon the offspring. These three problems form the chief topics of the 27 monographs which constitute this volume of more than 1,000 pages. For obvious reasons no attempt can be made to even indicate here how the various writers have disposed of their respective subjects. But an approximate idea of the completeness and value of this treatise on "Disease and Marriage," may be gained from an enumeration of the various essays and their authors. The first half of the volume is devoted entirely to subjects of general interest: "The Hygienic Aspects of Marriage," by M. Gruber; "Congenital and Inherited Diseases," by J. Orth; "Intermarriage," by F. Krauss; "Climate, Race and Nationality," by Havelberg; "Sexual Hygiene of Married Life," by P. Fuerbringer; "Menstruation, Pregnancy, the Puerperium and Nursing," by R. Kossman. The second half of the volume deals with the relations existing between the various diseases and the married state: "Constitutional Diseases," by H. Senator; "Diseases of the Blood," by H. Rosin; "Diseases of the Circulatory System," von Leyden and W. Wolff; "Diseases of the Respiratory System," by S. Kaminer; "Diseases of the Digestive System," by Ewald; "Renal Disturbances," by P. F. Richter; "Diseases of the Locomotor Apparatus," by Hoffa; "Eye Diseases," by G. Abelsdorff; "Skin Diseases and Syphilis," by R. Lederman; "Gonorrhea," by Neisser; "Diseases of the Lower Urinary Tract and Physical Impotence," by Posner; "Gynecological Diseases and Impossibility of Conception," by L. Blumreich; "Nervous Diseases," by Eulenburg; "Insanity," by E. Mendel; "Sexual Perversion and Psychical Impotence," by A. Moll; "Alcoholism and Morphinism," by A. and R. Leppmann; "Professional Discretion and Marriage," by S. Placzek; "Social-Political Importance of the Hygiene of Married Life," by R. Eberstadt.

Each writer has furnished a systematic and exhaustive expose of the topic assigned to him in form of an independent monograph, to which is appended a list of all the most noteworthy contributions to the subject. The great number of truly excellent articles in this volume speaks well for the wisdom of the editors in the choice of their collaborators. This volume seems to us of such far-reaching importance for the modern physician that we most sincerely hope to see it soon translated into the English language.

EYE, EAR, NOSE AND THROAT NURSING. By A. EDWARD DAVIS, A. M., M. D., and BEAMAN DOUGLASS, M. D., with 32 illustrations. Price, \$1.25 net. F. A. Davis Company, Publishers, Philadelphia.

This little work, which is carefully and interestingly written, contains much practical information on a subject largely neglected in the general works on "Nursing." On page 20 are two "commandments" which should be rigorously heeded by all nurses engaged in ophthalmic nursing. The first is "thou shalt be altogether clean and gentle when caring for the eyes." The second, "thou shalt not apply poultices to the eye." Gentleness is again indirectly admonished on page 21, where we learn that the "touch of some nurses, also of some doctors, is as the tread of an elephant."

This little work, in common with nearly all the larger text-books on diseases of the eye, fails to mention the use of the weaker solutions of silver nitrate (gr. i, or gr. ii to the ounce), in the treatment of the simple catarrhal affections of the conjunctiva. The routine use of one and two per cent. solutions in cases of simple conjunctivitis, as taught by Dr. Davis, is not in accord with the best ophthalmic opinion. Such a use of silver nitrate is extremely painful, even when neutralized by salt solution, and, in the opinion of the reviewer, positively retards recovery.

BACTERIOLOGY AND SURGICAL TECHNIC FOR NURSES. By EMILY M. A. STONEY, Superintendent of the Training School for Nurses, St. Anthony's Hospital, Rock Island, Ill. Second edition, revised by Frederick R. Griffith, M. D. 12mo volume of 278 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Co. 1905. Cloth, \$1.50 net.

The revision of the second edition of this practical work has been most thorough and extensive, the book having been increased in size by the addition of over 80 pages and many cuts. Dr. Frederick R. Griffith, to whom the work of revision was intrusted, has added several chapters of unquestionable importance: namely, bandaging and dressings; obstetric nursing, care of infants, etc.; hygiene and personal conduct of the nurse, etc.

A REFERENCE HANDBOOK FOR NURSES. By AMANDA K. BECK, of Chicago. 32mo volume of 150 pages. Philadelphia and London: W. B. Saunders & Co. 1905. Bound in flexible morocco, \$1.25 net.

This little book contains information upon every question that comes to a nurse in her daily work, and embraces all the information that she requires to carry out any directions given by the physician; it includes also instructions for all emergencies that may arise before or between visits of the physician. Physicians will find the book of value, because it contains exact details as to solutions, foods, dosage, poultices, applications, etc.

THE DEVELOPMENT OF THE HUMAN BODY. A Manual of Human Embryology. By J. PLAYFAIR McMURRICH, A. M., Ph. D., Professor of Anatomy in the University of Michigan. Second edition, revised and enlarged. With 272 illustrations. Philadelphia: P. Blakiston's Son & Co. 1904. Price, \$3.00 net.

The first edition of this well-known and well-liked manual of embryology has become quickly exhausted, and the author makes use of the welcome opportunity to incorporate in this second edition the most recent literature and correct a few errors and faulty expressions of the previous edition.

TEXT-BOOK OF OBSTETRICS. By ADAM H. WRIGHT, Professor of Obstetrics in the Medical Faculty of the University of Toronto. Publishers: D. Appleton & Co., New York. 1905. Price, \$4.50.

This new text-book of obstetrics will undoubtedly appeal to the student and practitioner. The author's presentation of the subject is decidedly from the standpoint of the practitioner. He avoids theorizing and devotes considerable space to therapy. Paragraphs dealing with questions like the following: "When may patient leave the bed? or, "is the presence of the husband during labor desirable?" etc., will certainly be appreciated by the young physician. The writer is conservative and lays particular stress upon "nature's efforts and methods." The style of this book is unusually direct and forcible, and made interesting by the interpolation of brief historical sketches, of which the one entitled "Listerism and Obstetrics," deserves special mention.

Being a first edition it is not surprising that the volume contains some inaccuracies, a few of which we may be permitted to point out. No mention is made of the process of embedding of the ovum in the uterine cavity, and, therefore, of necessity, the description of the formation of amnion and chorion and especially of the chorionic villi is, to say the least, lacking in clearness. On page 185 the definition of uniovular twins could be improved upon. The author speaks of ova discharged from the *same* follicle, and in the next sentence speaks of *two* follicles. On the following page he makes the surprising statement that uniovular twins may be of different sex. When the author warns against vaginal douche (on page 220) on account of the possibility that the douche may be forced into the peritoneal cavity, he apparently forgot that he was writing about the use of the douche during pregnancy. We do not believe that a pyosalpinx or suppurative ovarian cyst ruptures into the vagina spontaneously as is suggested on page 270. The author apparently has not accepted the view of a great number of modern authorities that a hydramnion of pregnancy may be actually caused by a leakage of amniotic fluid.

It is obvious that these criticisms are offered solely for the purpose of seeing these mistakes corrected in the next edition.

A HAND-BOOK OF NURSING. Revised Edition for Hospital and General Use. Published under the Direction of the Connecticut Training School for Nurses. Philadelphia and London: J. B. Lippincott Company. 1905. 12mo. 319 pages.

The general advance in the science of medicine has made it necessary to revise and enlarge the Connecticut Hand-Book of Nursing which has appeared in its first edition in 1878. This new edition provides instruction for hospital nurses in preparation for their later work in private families and is intended to assist the nurse in the intelligent performance of her daily duties.

INTERSTATE MEDICAL JOURNAL.

VOL. XII.

JULY, 1905.

No. 7.

ORIGINAL ARTICLES.

SUPERSTITION IN MEDICINE.*

BY M. G. SEELIG, M. D., of Louis, Mo.

A title as lacking in connotative qualities as is "Superstition in Medicine," demands at least a few words of explanation in order to start us off on common ground, and with a common understanding. Superstition does not embrace merely the innumerable instances of the ludicrous in medicine, resting on a false basis of deduction, nor does it consist merely in a large store of folk lore, with its numerous mystic side lights on the art of medicine. The term is a broader, a more comprehensive one. Lehmann, in his "Aberglaube und Zauberei," attempts to express this breadth when he coins the definition, "Superstition represents the overflow of the mind along religious or scientific paths." These overflows course along the natural road of advancement, for they all lead to error. Truth ultimately results only from the correction of error, and by truth alone are we advanced. We need call to mind merely the one fact that our modern, highly scientific chemistry unquestionably takes its origin from the magic and superstition of old time alchemy. Superstition then, is for us the assertion of, and belief in doctrines not possessing the necessary scientific and rational basis on which to rest. It is claimed, neither by statement nor by inference, that these false conceptions have absolutely *no* basis; such an assertion would deny to superstition its genesis. The present day disciple of Swedenborg and Andrew Jackson Davis does not develop his ghosts and spooks from absolute nothingness. Countless ages back the idea of ghost may have originated in the mind of one of our forest roaming progenitors as the result of seeing a moon illuminated, somewhat human shaped tree stump. The present-day doctrine of our Christian Science brethren may have had its tiniest beginning in a mental derangement of this self-same progenitor, who so clothed his delusions that they assumed the form of truth. At all events, *somewhere* will be found a basis on which to rest the error. Faulty observation, or faulty deduction from a correctly observed fact, are the bases on which superstition rests. Astrology, for instance, with its veritable maze of medical highways and byways, received its death blow

* Read before the Medical Science Club of St. Louis, February 10, 1905.

only when, by correct observation and deduction, the facts of the planetary system were developed.

Truth absolute has never reigned; alluring theories, vain reasonings, inconclusive deductions have constantly shifted the magnetic needle from the north. There is in the very nature of man a vague something, a mystic reverence for the so-called unknowable, an inherent perverseness to lose his course, that has constantly led him astray, even in his wisest moments of clearest thought. Let us, then, this evening point out these wanderings of all times, and show that by frequent boxings of the compass the true course is gradually found, but that the needle never remains true.

It is but natural to suppose that superstition, in its essence, could be best studied in the earliest primitive races. Unfortunately, however, historical records do not extend back far enough to give us trustworthy data concerning the habits of life and thought of the world's earliest tribal communities. Historians have extricated themselves from this dilemma by studying aboriginal tribes living today. They tell us that in Africa and Asia, in Australia and America human beings may be found so thoroughly isolated from the influence of modern civilization as to be models of the earliest primitive races. Some historians, indeed, have taken our own North American Indian as a type of the world's primitive peoples; and this fact, in itself, proves the thesis that these earliest people were in the highest degree superstitious. All of us are more or less acquainted with the superstitious vagaries, medical and non-medical, of our North American Indian. Max Bartels in his medico historical classic, "*Die Medicine der Naturvoelker*," tells us that in all primitive peoples the ideas of demoniacal influences, spirit powers, and the hatred of the gods are interspersed only here and there with a rational thought. In all of these aboriginal tribes there exists the idea that the power to heal is a divine right, granted by the gods only to certain individuals. In the spiritual as well as in the scientific life of these early peoples, superstition runs riot and the absolute lack of a rational basis of thought permits us to characterize their mental processes as fantasies, rather than as attempts to correlate facts, and to deduce even falsely therefrom.

The earliest written records that have come down to us concern the Egyptians of about 6000 B. C. From the early hieroglyphics we learn that Egyptian medicine was largely a God medicine, with Isis presiding and a range of lesser sacred medical dignitaries, running all the way down to Ibis, the God of Enemata, an office which he was well able to fulfill, owing to his long canula-shaped beak. Theurgy, astrology and alchemy had their earliest beginning under Egyptian regime. The history of the Chaldeans dates back almost as far as does that of the Egyptians. We have writings concerning them that go back 5000 years B. C. From their clay tablets we learn that they also were largely governed by

the idea of the divine influence on man. Diseases were regarded as the impersonations of evil spirits that could be banished only through imploring the aid of the gods, who in their turn advised the method of riddance, be it by a bath in water from an uncontaminated stream, or by wrapping the head of the patient in one-fourteenth of the hide of a female camel, who had never borne young, or by some other equally fantastic procedure. Exorcism, prayers, and incantations played an important part in Chaldean medicine, different prayers being used to suit different occasions. Pregnant women e. g. always prayed, "Oh God Bitnur, drive my pains far into the distance, strengthen my foetus, and see that its head develops fully." Under these same Chaldeans, 2000 years later, during the rule of Sargon I, astrology first began to assume a prominent place; and hand in hand with the worship of the heavenly bodies there developed the peculiar superstition of attaching significance to animal life—a yellow dog boded ill, a reddish one signified health and good luck. This same people it was who first developed the idea of unravelling dreams, and of weaving a veritable system of prognostics about them.

The superstition of the Egyptians and Chaldeans, although it unquestionably is less fantastic than that of the primitive races, and, although it contains the nucleus of at least a bit more scientific thought, is nevertheless rank superstition; superstition moreover of rather serious import, since it spread by direct contact to the early Persians. The Graeco-Persian wars served as an outlet for many of these beliefs to start new growth on a fallow soil; so that when finally Alexander the Great conquered Persia, Greece was fairly overrun with the old brand of Chaldean superstition. It is a confirmed fact, that up to the time of Hippocrates, medicine in Greece consisted largely in prayers and oracles, exorcisms and incantations.

The old Jews were freer from superstition than any other ancient people, they recognized no good and no bad spirits, and no Gods save Jehovah. The laws of Moses specifically prohibit the commoner forms of superstitious belief and magic. Despite these checks, however, there is no lack of evidence to show that superstition played no small part in the life of the early Jews. Demons, it is true, they did not consider, but they placed almost a blind faith in the so-called cabalistic writings. These writings were made up of words representing numbers, each word possessing a charmed significance, the system having supposedly originated with the angels. We should naturally expect that from their close contact with the Babylonians and Assyrians, the Jews must have absorbed some of the general tendency and leaning toward superstition, all the Mosaic laws to the contrary notwithstanding; and such a supposition if we are to believe Lehmann, is correct, for he tells us that during the era of Babylonian captivity the mind, manners, customs and daily life of the Jews were fairly honey-combed with superstitious beliefs; even the

Talmud itself, a book regarded as one of the most rational of medical compends, mirrors here and there a tendency distinctly superstitious in nature, as may be seen by reading the treatment prescribed for vesical stone and atresia ani.

The Jews, Egyptians, Chaldeans, Persians, Chinese and Japanese, constitute a set of races whose history is not directly linked with the progressive modern day advancement of medical science. The beginning of the true march of medical progress dates with the Greeks.

We have already considered primitive and ancient people, and have attempted to show that their spiritual life as a whole, was little less than a maze of superstition. There remains, then, the task of tracing tendencies from the early Greeks down to modern days. The exigencies of time and space absolutely demand that our considerations be along broad lines; details, however interesting, may not detain us in our object to search for superstition, to note it when found, and then to pass to other times in other lands. Let us not forget in our search, however, that we have agreed to consider superstition as deductions resting on grounds that we in our times regard as irrational and unwarranted, and that the basis of all superstition is false observation or false deduction or both.

In dealing with early Greek medicine, our avowed object is not to point out its excellencies, for they are admitted; not to detail its forestalling of modern ideas and not to practice critique on its rational doctrines; but solely to show that medicine is indissolubly bound up with general culture, that since the general culture preceding the Greek period was fairly riddled with superstition, and that since the decadence of Greece was also characterized by a similar tendency, we may expect evidences of superstition, mysticism and speculation to be scattered through the whole Greek medicine, even during its most robust era.

The direct forerunners of Hippocrates were the caste of Asklepiades, direct descendants of the God Esculapius. In their honor temples were built, to these temples patients repaired and were attended by priests. So great was the faith of these patients in the Gods that they brought, in fact were forced to bring them, gifts of gold and ivory. These gifts the priests furtively secreted and disposed of for their own gain. Here we have, in almost the earliest of times, superstition as the basis of the rankest quackery.

Hippocrates, himself, lived during the height of the culture of Greece. Thucydides, Herodotus, Pericles, Aeschylus, Sophocles and Euripides were his contemporaries. His writings ought to be, and are, free from almost all traces of the mystic and superstitious. But are they entirely free? The very foundation of his system rests on the crassest humoralistic basis. The body is made up entirely of watery elements. These must conform to the established four elements of nature, therefore he creates four special fluids: blood representing heat, mucus cold, black bile dryness and yellow bile wetness. The mucus was secreted by the brain,

trickled through the cribriform plate of the nose, and was thence distributed through all parts of the body, sneezing, therefore, was a most healthful act, hence our present day "God bless you." The black bile was secreted by the spleen, which poured it into the stomach. Health consisted in an absolutely correct proportion of these four elements, disease in a disturbed balance. View this conception as we may it is difficult to divorce ourselves from the idea that, resting on an entirely false basis of observation and deduction as it does, it must be classed among the superstitions. Hippocratic medicine was not great and sound and practical because of these theoretical conceptions. Hippocrates' keenness of clinical observation was so extraordinarily great that his system was practical, despite the hampering influence of falsely dogmatic assumptions. In spite of the fact that Hippocrates was followed by Aristotle, the founder of the deductive system of reasoning, and forerunner of the Alexandrian school of medicine, despite the fact that the Alexandrians were even closer students of nature and natural laws than Hippocrates himself, and despite the fact that this was an era of extraordinarily high type of practical medicine we still see, during this whole period, the enunciation of medical doctrines that we to-day should class as the crudest imaginings. The methodists, empiricists, encyclopedists, pneumatics and eclectics, were schools that varied often only in hair-splitting sophistic details concerning humoral and solid pathology. These were the days of the development of cure-all drinks, the so-called Theriaca, and of the dilettante preparation of cosmetics, no less a person than Cleopatra herself engaging in the art of describing their preparation and their influence on the diseases of women; days, in short, characterized by Pagel as evidencing an absolute absence of anything scientific pertaining to the practice or science of medicine.

This decadence of medicine in Greece is only one of the weak links in the steadily forged chain of medical advancement. It is no more possible for heresy and superstition to maintain a permanent dominancy than it is for a noxious drug to serve as a steady article of diet. One narrows and withers the mind and spirit, the other incapacitates the body. Either the race dies, heresy perishing with it, or it wakens and by its very awakening crowds superstition once again into the background. The death-bed scene of medicine we just saw in Athens. Let us turn to Rome for the resurrection. One hundred years before Christ medicine in Rome was in the hands of bathing attendants, slaves and recently freed men. The elder Marcus Porcius Cato himself states that there was no place for the science of medicine, since all diseases could be cured by a draught of wine, with a lump of coal in it. This was a larval stage. Two hundred years later the fully equipped imago, in the shape of a new medicine begins its life cycle, and we enter the Galenic era, an era, lasting nearly fourteen centuries. Here, again, it is not the spirit of Galenic medicine that is under discussion. Its excellencies are

not the subject of the critique. The question is: granting a high tone and a rational basis to this Galenic era, do we nevertheless not find evidences of the ever present superstitions?

Pagel states that we should not allow ourselves to become too enamored of the high lights of Galen's doctrines and their influence lest we overlook the shadows. Many of the expected good results of his medicine we are told were nullified by his serious attempt to stimulate pure speculation by leagueing medicine with philosophy. Pure speculation at the very outset—on guard for superstition! A combination of Plato's idealism and Aristotle's rationalism led Galen into a maze of dialectic. To him nothing in medicine was unsolvable. Dialectic reasoning was the nut cracker that he used on all hard facts. All questions of medicine he not only answered with ease, but with an unwavering authority, and in this fact lies the magic of his influence, extending through so many centuries. Many of the speculative fetiches that Galen set up served as doctrinal theses on which rested much of the superstition of the middle ages. Let us merely call to mind that Galenic physiology firmly established the belief that the body's only function was to serve the soul, and for this purpose the various organs must be regarded as tools. We see the same sort of speculation in his pathology; he developed the humoral idea by adding the so-called dyscrasiae, and the limiting factors of age, residence and mode of life, diluting and re-diluting the doctrine until it was a veritable mosaic of fancy.

This marked theoretical tendency contrasts sharply with the eminent practicability of Hippocrates. Galen's autocratic establishment of irrational doctrines, in other words, of doctrines which flavored strongly of superstition, has been said by the great clinician of Holland-Boerhaave, to have worked more harm than good for medicine. So summary a charge against Galen might well be conceived to have its genesis in a preconceived purpose of the author to search for evidences of superstition and disclose them, at all cost, rather than in a desire to furnish a correct interpretation of Galenic doctrines. Those of us, however, who do read questionable elements into Galen's work are not alone in our interpretations. Dr. Osler in his address, "Teaching and Thinking," refers to "Thaumaturgic and Galenic superstition." Pagel's and Boerhaave's opinions have already been quoted, and Haeser voices the same sentiments.

Galen's autocracy maintained itself throughout the entire period of the middle ages, and served as a hull to which innumerable barnacles attached themselves. It is hardly necessary to confirm the statement that medicine during the middle ages was fairly crusted over with superstitions. In no branch of science is the general tone and culture of people more accurately mirrored than in medicine. No gap is more quickly sought out as a point of support by the tentacles of superstition than is a hiatus in medical knowledge; therefore, instead of citing specific false

doctrines and theories, we need only call to mind the general tone of the middle ages, with their crusades, feudal barbarities and witchcraft, with their neuplatonic philosophy leading up to magic, sorcery and exorcisms with their theological struggles, allying terrorism with credulity; in short, with their everything that goes to make them merit the title of "Dark Ages." In the very midst of this darkness Arabian medicine arose, and with such lights as Avicenna, Avenzoar, Averroes, Rhazes and Maimonides it made a clearing. But by the 12th century the light failed. Arabic religious doctrines clashed with the idea of investigative research, dogma won out, and the ever-present superstition again raised its head.

Roger Bacon, Englishman, philosopher and politician; Arnold de Vilanova, Spaniard, scientist; Henri de Mondeville, Frenchman, physician, and Francesco Petrarca, Italian poet, ushered in the so-called prerenaissance, a period extending from the 13th to the 15th centuries, characterized by the remains of many of the viciously superstitious doctrines of the middle ages, rapidly giving way to enlightenment, reason and investigation. Errors of such magnitude as those that honey-combed the middle ages could not disappear at once, even under the onslaughts of a Bacon, a de Mondeville, or a Guy de Chauliac. The atmosphere cleared only with the advent of the true renaissance. The 15th and the early part of the 16th century are accorded the position of honor in the world's history. This was the era of Columbus and his American discoveries, Guttenberg and his printing press, Luther and his protestations, the era of the introduction of gun powder, the founding of universities, and the complete revolution of ideas, social, political and religious. During these times there lived three of the most noted men in medical history, men who gave color to their own and all succeeding ages: Andreas Vesalius, the anatomist; Ambroise Pare, the surgeon, and Philippus Theophrastus Paracelsus, the physician. Truly, we are again in times of the whitest high lights, with seemingly no place for the shadows of irrational dogma or doctrine. Let us see, then, if medicine, even in these advanced times, is truly free from superstition.

It is a matter of history, that in the newly founded Italian universities Plato was revived and studied most assiduously. With this study came to life again the same neuplatonism, which was the basis of so much false belief during the middle ages. Now, as then, neuplatonism assumed the right of citizenship in medicine; as a result at no time did astrology, alchemy, necromancy and witchcraft flourish more luxuriantly than during the early 16th century. This was the time of the widespread of three of the greatest plagues in history: syphilis, the English sweat and typhus exanthematicus. Haeser tells us that none of the greatest thinkers of the time, Luther included, doubted for a moment that these plagues were the manifestations of demons. Thomas Erastus, one of the greatest thinkers of all times, openly preached his

belief in demons and ghosts. The medical representative of the times, Paracelsus, himself has been judged a mystic, a deceiver and a quack, owing to the influence of the times on his doctrines and teaching. Even the 16th century, then the close of our much vaunted renaissance, not only ended what had been a veritable inundation of new thought, but also marked an era of innumerable mental overflows far away from the direct channel.

The 17th century gives birth again to a deep and earnest attempt at a serious interpretation of facts and phenomena. Mysticism and superstition, such as we have described during the 16th century, palls before the philosophy of Francis Bacon, Descartes and Spinoza, a philosophy and development for which the time was ripe, and which absolutely forced itself on men's minds. Never was better exemplified Huxley's terse epigram, "Knowledge is brought, not sought." Bacon, with his inductive method; Descartes, with his "cogito, ergo sum;" Spinoza, with his doctrine of pantheism. We may well listen sharp for so much as the tone of a false ring during such times. Robert Boyle, Johann van Helmont, Glauber, von Leuwenhoek, Harvey, Steno, Malpighi, Lower, Cooper, Wirsung, Glisson, Wharton, Silvius, Willis, Highmore, Sydenham, all these and many more should serve as effectual checks to the searcher for evidences of the spurious and false in medicine during this 17th century era. Yet, according to Baas, there existed during this very era of progress and enlightenment, two sets of physicians: one the so-called regular set, made up of court, field, hospital and pest physicians, wound doctors, apothecaries, midwives and nurses, and the other a set of quacks, made up of old women, village ministers, dispensers of quack salves, urine prophets, peripatetic Jews, crystal gazers, gypsy fortune tellers, demon and devil banishers, sooth sayers and rat catchers: a motley crowd to be leagued with the preceding illustrious names, if only by the slight bond of consanguinity of time. We are almost up to modern days, and we have not as yet been able to shake our science free from some form of superstition, a superstition at times only too patent and yet never so concealed as to require diligent search.

Yet it must have struck some of us that we have really had to do with two distinct varieties: the one based purely on faulty observation and deduction, originating in no desire to deceive and resulting in nothing more than the growth of an intricate maze of fantasy and delusion. The other based on the gullible in human nature, intent on deception and personal gain, and resulting in a set of vicious and debasing practices. The latter half of the 18th century really marks the crowning point of this crass variety. Friedrich Anton Mesmer, with his tinkling bells, liveried attendants and magnetic passes; Samuel Hahnemann, with his (so aptly termed by the Germans) "bloedsinn;" Franz Joseph Gall, with his cranioscopy or phrenology, all thrived side by side with such men as Hoffman, Stahl, Boerhaave, van Swieten, Auenbrugger,

Haller, Morgagni, Hunter, Jenner, Pott, Petit and Bell. Still room for superstition! And need I mention that in our very own times, despite our Spencers and Huxleys, our Darwins and Weissmans, our Virchows and Pasteurs and Kochs, we are still obliged to wear armor against spiritualism and Christian Science, against osteopathy and Doweyism, against theosophy and the miracles of Lourdes and St. Anne.

Does not, after all, the ever present spirit of superstition, as we have traced it from the earliest times, serve as a stimulus to scientific medicine to strengthen her defenses? Is it not after all the same old battle of shell against armor? Are not false doctrines the surest sign posts of whither not to stray, and do they not eventually point out with certainty the right way? My task has surely been one of love's labor lost were I to view the situation with a pessimistic air of doubt. Medicine, let us never forget, is not an exact science, and its very inexactness is the spring and fountain head of false theorizings, leading to superstitions. New trails are blazed by each new Messiah, and nothing is surer than that there are Hippocrateses and Aristotles, Virchows and Darwins yet to come. If the underbrush is disturbing let us, with Dr. Osler, at least contemplate the disturbance with the spirit of "æquanimitas!" The days of incantation and witchcraft are passed, demons and gods have been relegated to their proper places, and as more and more light is shed we shall see verified Tennyson's prophecy,

"Yet I doubt not through the ages one increasing purpose runs,
And the thoughts of men are widened with the process of the suns."

3908 Olive street.

A BRIEF HISTORY OF PREVENTIVE MEDICINE.*

BY G. C. CRANDALL, B. S., M. D., St. Louis.

PROFESSOR OF INTERNAL MEDICINE, MEDICAL DEPARTMENT, ST. LOUIS UNIVERSITY.

Gentlemen:—The subject I have chosen for this lecture is one which demands the attention of the profession on every hand. Whether in general or in special work the physician must recognize the importance of prophylaxis.

According to Herbert Spencer, "The actions and precautions by which from moment to moment we secure personal safety clearly take precedence over all others. . . . Besides guarding the body against mechanical damage or destruction it has to be guarded against injury from other causes—against the disease and death that follow breaches of physiologic law. . . . If any one doubts the importance of an acquaintance with the fundamental principles of physiology as a means to complete living, let him look around and see how many men and women he can find in middle or later life who are thoroughly well."

* A special lecture delivered before the medical students of the St. Louis University, March 27, 1905.

So far back as history relates we find people of all degrees of civilization making efforts to protect themselves from disease; and, in reviewing the various means employed in comparison with our present knowledge of medicine, we find a great deal that has been done in the past useless or inadequate for the purpose. On the other hand, some of their efforts have availed much and demonstrate to us the possibilities of prophylaxis. It matters not whether they knew the reason for the benefit they derived in any particular regulation or custom; suffice it to say they obtained results, and the value of some of their work in this direction can be rationally explained in the light of modern science.

Preventive medicine consists of all those means used by the individual, the community or the state in the prevention of disease.

Among the primitive peoples we find it to consist chiefly of protection against atmospheric conditions, some regulations regarding food and drink and magic rites, which last has its source in the idea of the demonological origin of disease.

As people become civilized they gradually learned a more scientific view of illness, but to the present day no people has reached so high a degree of civilization as to wholly discard the idea of supernatural causes in relation to disease.

We have evidence that the Ptolemies permitted examinations of the dead to determine if possible the causes of disease, naturally with an idea to prevent it when possible. Unfortunately for science this privilege to study from the dead has not always existed.

Excepting the Japanese, it may be said that the peoples of the East have not advanced very far beyond their ancient civilization in medical matters; however, with the Japanese spirit pervading the East, as it promises to continue, I think we may confidently look for progress. No doubt overpopulation in these countries has had much to do with laxity in sanitary matters, and not having placed themselves in intimate touch with civilization wherever found, as have their neighbors, the Japanese, the people of China and India disregard the simplest sanitary customs of civilization. They have been called the home of pestilence, as the constant presence among these people of the plague and cholera serves to illustrate. The individual has been of little importance to the community, and the state has made little or no effort to protect him.

In contrast with the customs of the Eastern people, observe those of the Hebrew race, which has struggled against adversity and found it necessary to economize their numbers. Some of the earliest directions in matters of hygiene were embodied by Moses in the laws laid down for the care of his people, and to disregard these hygienic regulations was considered criminal. Some of them referred to food, and one considering the isolation of leprosy has come down to our own time, the scope of the latter having been extended with our knowledge of infectious diseases.

The guinea-worm disease which infects people in the tropics can probably be traced back to this remote period, as they are thought to have been the fiery serpents which plagued the children of Israel in the wilderness. Rufus, an Arabian physician of Ephesus, described it well and remarked: "The Arabians suffer from it and many strangers acquire the disease if they drink the water, for that is the chief cause." In these few words we have the cause, which emphasizes the means of prophylaxis; and with our more extended observation of the parasite and its aquatic host, the cyclops, we can add nothing as a means of prevention.

Solomon was known to have interested himself in measures to preserve the health of his people.

The world can never know all of interest and value that was destroyed with the destruction of the Alexandria Library, and it is quite possible that some observations of our recent centuries were recorded in those manuscripts which had been collected from the then known world.

The Greeks cultivating the arts and sciences with considerable zeal did not neglect medicine, and learned to observe the symptoms of disease quite accurately, likewise accomplished something in prophylaxis. The Pythagoreans appear to have introduced the custom of visiting patients in their own homes.

Empedocles, of Agrigentum, showed a certain appreciation of sanitary principles in the following manner: He observed that epidemics of fever ravaged the city with a return of the sirocco, an oppressive wind blowing upon Sicily from the west at certain seasons; to obviate the disastrous results, he advised that a wall be made to close the gorge through which this wind blew upon the city, with the result that the fevers ceased to prevail. Such sanitary engineering would do credit to the present time.

He further demonstrated his knowledge of sanitary science in the city of Selinus, where the stagnant waters of a sluggish stream constantly menaced the health of the city, causing recurring epidemics. To overcome this he directed that two smaller streams be conducted into it which so increased the volume of water as to relieve the unhealthy condition. Would we have done any better today? I fear not.

The Greeks and Romans, recognizing the value of cleanliness and exercise, devoted great attention to the means of securing these advantages, and the historical accounts of their games and the ruins of their baths speak for the part they played in the life of their people.

The gymnasium, an institution developed to its greatest perfection by the Greeks, was an important means of preventing disease, through the care and attention given the physical system. Modern educators are constantly giving the physical training and care of the young more consideration, making it a part of the public school system. Again, people begin to hear and talk of Olympic games and contests as did the ancient Greeks; and while physical culture, as any element in education, may

be abused, the reasonable cultivation of the physical system is as important as the mental.

An important item in the old Greek gymnasium is of special interest to us, viz., massage, and should today be given greater attention by the medical profession. It was considered both an excellent therapeutic agent and a valuable prophylactic measure, especially the latter in that it was thought to retard the degenerative changes incident to old age.

Plato severely reprimanded Herodicus, a gymnasium director, for prolonging the lives of the aged.

If, as historians tell us, luxurious living and dissipation caused the decay of the Roman empire, we should not permit that fact to deter us from endeavoring to emulate their example in matters of cleanliness and of healthful, physical exercise.

These ancient people and those of more remote times were doubtless struggling with the question of pure water which agitates many of our large cities today. In Assyria, Egypt, Greece and Rome we find the ruins of aqueducts and conduits constructed to secure a pure water supply, and those of Rome have remained in such a good state of preservation that in recent times they are again utilized. Hippocrates admonishes the physicians to test drinking water carefully, and especially cautions against the water from marshes.

The garbage question likewise received considerable attention, and the Cloaca Maxima of Rome is still in operation, where such material is burned as is done in many modern cities.

The sewage of these ancient cities was usually drained into the rivers, while in more modern times there have been some efforts of forming the sewage to avoid polluting the rivers. The Cloaca Maxima referred to, drained into the Tiber and as stagnation resulted during high water, Augustus directed that the drains be flushed as is done today.

Hippocrates discusses epidemics, for which he tries to account, and undertakes prophylactic measures.

Erasistratus wrote on personal hygiene, emphasized the dangers of over-indulgence in food and especially does he recommend exercise and diet. This is quite in accord with the famous Regimen Sanitatis Salerni said to have been written at Salernum chiefly for Robert, of Normandy, on his return from the Crusades:

Salerno's school in conclave high unites
To counsel England's king, and thus indites:
If thou to health and vigor wouldst attain,
Shun mighty cares; all anger deem profane;
From heavy suppers and much wine abstain;
Nor trivial count it after pompous fare
To rise from table and to take the air.
Shun idle noonday slumbers, nor delay
The urgent calls of nature to obey.
These rules if thou wilt follow to the end,
Thy life to greater length thou mayst extend.

Among the Greeks we find that Lycurgus advises simple food for his Spartans.

Pliny describes a pestilence which broke out among the soldiers of Alexander the Great on the march to India as a result of eating bad fish, and in Rome for centuries there was inspection of the products sold at the market in order to protect the public from unwholesome food.

During the Dark Ages much was lost and scarcely anything was added to prophylactic medicine as well as science in general.

Coming down to the fourteenth century we find that the plague devastated the countries of Europe, destroying one-quarter of the population of the then known civilized world. Some efforts were made at isolation, but it was ever recurring, possibly because of its unknown existence in the rat, which latter knowledge with our sanitary regulations enables us to avert or promptly check an epidemic.

In the fifteenth century leprosy prevailed, but, in contrast with the plague, isolation could be more easily secured, and it was better controlled.

For many centuries one of the epidemic fevers of Southern Europe was malaria, which began to be brought under control during the seventeenth century, through the discovery of the cinchona bark used by the natives in Peru.

In the latter part of the eighteenth century Jenner added one of the greatest boons to the realms of prophylaxis when he discovered vaccination for smallpox.

In our own country we find the aborigines in their savage, nomadic life not entirely ignorant of preventive medicine. The Indians, in the event of epidemics from which they occasionally suffered, would refer to the great serpent under the ground as the cause of so much illness among their people, and when their incantations did not avail to frighten away the demon, evidenced by the epidemic abating, they would move their village to another site in order to get away from the serpent.

In a sense we may apply the Indians' superstition to the causes of typhoid, cholera and dysentery, especially as they prevail among soldiers in camp life. Science has now demonstrated the demon to exist under and over the ground in the form of polluted water and food, and military surgeons concede that removal of the camp site is of greatest benefit in preventing or checking these epidemics. A fact which the Indians learned through crude observation we have established through scientific research. Soldiers have, however, on some occasions resorted too long to measures scarcely more potent than that of the poor Indian before moving the camp.

The natives of the tropics of this continent especially have long recognized in the bite of certain insects the cause of fevers, as of malaria and yellow fever.

Careful examination has proved beyond question that these are caused

by mosquitoes, and the prophylactic efforts along this line need no more convincing evidence than the fact that, acting upon this hypothesis, the American occupation of Cuba and renovation of its large cities has eliminated yellow fever and much of the malaria from Cuba during the past three years.

Looking to the same end, the city of New Orleans has bonded itself for eighteen millions of dollars, in the expenditure of which they expect to materially improve the sanitary condition of the city, rendering less possible epidemics which in years past have cost the city millions of dollars and many lives.

This excellent example should be followed by other American cities, especially those which have grown to a size which renders their sanitary conditions imperfect and their public institutions inadequate. Any city under these conditions can well afford to carry a liberal bonded debt, established for the betterment of the public in every respect, thus permitting more than one generation to assist in paying for necessary public improvements which would seem a burden for one generation.

The various governments of civilized countries have for years accomplished much in the direction of preventive medicine through the maintenance of a more or less well equipped military and marine medical service.

Our own country has kept well abreast of the world in this direction, and in spite of greatly increased communication with all countries and peoples, the introduction of infectious diseases has been in all recent times well under control. The cases of bubonic plague, yellow fever, etc., which from time to time reach our shores are so quickly quarantined that the people of the coast cities feel secure in the close inspection which safeguards the public from such danger.

While much has been done to protect us from without, less systematic and thorough work has been done in the regulation of the sanitary affairs throughout the country. Some states are developing well-equipped and effective departments of public health, and this individual effort is now being made to conform to a general plan co-operating with each other, which in time, it is hoped, will also co-operate with a central department at Washington under government supervision. The necessity of a bureau of public health is imperative. Such a department could undertake all investigations of food and drugs now to some extent being creditably studied in the laboratory of the department of agriculture. Such a bureau could exercise at least a valuable advisory function in relation to the various state departments.

When each state fully realizes that in medical and sanitary affairs it is only a member of a large family, for which well-ordered, uniform health regulations should exist, the sooner will we see a more perfect system of public hygiene.

When public health institutions cease to be the prey and spoils of

politicians, who wish to avail themselves of the political advantage incident to farming the patronage of such institutions, then, and not till then, will such institutions become what they are designed and should be—institutions for the public first and last, where every rational effort in the study, treatment and prevention of disease may obtain.

According to Theobald Smith, "The first regular organized laboratories for the study of disease were those founded and maintained by the United States government at Washington. After those in this country come the laboratories of the present Institute of Infectious Diseases in Berlin, then the Pasteur Institute in Paris, and later those of other countries."

Our own government is to be congratulated upon this fact, and though the pure food bill has so far gone by default, let us hope that the result of the work in the government, state and private laboratories will win for the measure such convincing evidence that the next congress will approve it, increasing its prophylactic value by including with pure food pure drugs.

This country has been one of the instructors of a very apt pupil, as the recently well regulated sanitary department of the Japanese army emphatically illustrates; in fact, if reports be true, the Japanese have lived more closely to the letter and the spirit of generally recognized hygienic laws than did our own government in some recent military operations.

With a national organization assisting, and being assisted by state organizations, this country can attain as high a degree as any in the results of sanitary regulations.

The public and the state is often attracted more promptly to those things which concerns the financial condition than that which concerns the health of the people.

There has been much profitable work done by the government in prophylaxis, as related to animal and plant industry, *e. g.*, the pyroplasma of Texas fever, resulting in prompt and stringent prophylactic measures in the states affected; the parasite of sheep scab with similar results, hog cholera and chicken cholera may also be mentioned; among plant diseases in which the cause and consequent prevention has been found may be mentioned San Jose scale, and just now the South is much agitated to discover a prophylactic measure against the cotton boll weevil.

It is encouraging for the further knowledge of prophylaxis as related to diseases of man, to note the added interest for original investigation as evidenced during the past few years. The founding of the Rockefeller Institute for medical research is a good omen.

The universities of the country are constantly increasing the facilities for original research, but let us not think that we can observe and discover only in these more favored places.

Koch discovered the tubercle bacillus in a little country place, apart from an elaborately equipped laboratory, and this should make us ap-

preciate the opportunity everywhere present to at least assist in the discovery of some new fact about our science.

Hand in hand with the discovery of the cause comes that of the prevention, and the time has come when every medical school should have some instruction upon preventive medicine, since the physician of the future will be called upon more frequently to protect the health of the individual and of the community.

We are now consulted about numerous hygienic matters, *e. g.*, the danger of uncooked meat conveying trichina or tapeworm, the danger of ptomain poisoning from stale or poorly prepared food, the danger of food preservatives, the danger of metallic poisons in food containers or wall paper, the care of milk and milk products and the purity of water. Improved instruction concerning the last two items has already saved thousands of lives yearly.

In our efforts to prevent infectious diseases we have two resources, *viz.*, isolation and artificial immunization, the latter means being especially practical in smallpox, diphtheria, tetanus and plague, and in time we may discover the cause and then the means of prevention of some of the common diseases of childhood.

After all there may then remain a group of diseases to which we refer as constitutional, for which prophylaxis should begin early in life to overcome if possible inherited or acquired pathological tendencies; often much can be done to improve the development and render the individual strong and more vigorous, capable of resisting diseases which would otherwise greatly endanger him.

The most difficult diseases to control are those of a chronic infectious character, which develop so insidiously that the individual and his associates may be ignorant of the fact until the disease has advanced to a considerable extent, and the state should do all in its power to protect the healthy from the ill.

Consumption destroys 150,000 people yearly, being equaled by only one acute disease, *viz.*, pneumonia. Some of the large cities now require both of these diseases to be under the control of the health department. The city of St. Louis has just placed tuberculosis on the list of diseases to be reported to the board of health, and the state has provided for the erection of a home in a desirable locality where the indigent consumptives, especially, may receive proper care, thus relieving hospitals of cases which are a menace to other patients. In connection with the crusade against tuberculosis, literature upon the subject should be distributed to the afflicted, instructing them in the hygienic measures, to improve their own condition and protect the public.

The history of venereal disease shows that all countries suffer from its ravages, which in its various forms are so far reaching as to occupy a most important place among infectious diseases. With this as with tuberculosis, a certain amount of popular instruction is necessary,

which, coupled with some wholesome regulation, we will hope may accomplish results. Were it not for the fact that it offends the moral code they would be at once placed in the list of infectious diseases, subject to regulation by health boards.

Let us not think that preventive medicine lies only in protecting the individual against infectious and toxic agents; in its broadest sense it may be applied also to the development of individuals, consequently the oft heard expression that "treatment should have begun with the ancestors."

The life of the child should be so ordered that they may attain, as nearly as possible, for their respective condition of life a normal physical and mental development. To secure this result greater attention must be paid to the physical and mental hygiene of schools, more care in the classification of pupils according to their physical and mental capacities.

Efforts in this direction are being made in some of our public schools and those of other countries with considerable success.

Physicians inspect the schools at regular intervals, watching for evidences of infectious diseases, also of defects of vision and, in some cases, any untoward nervous or mental manifestations; they likewise observe the general hygienic condition of the school and its surroundings. This supervision of school life requires some attention to the home life, which function the health department already exercises to some extent in that it has the authority to correct some conditions which may be a menace to the community.

Before closing I must refer to certain obstacles with which, at present, we have to contend in all measures looking to protection of public health: but I believe these will diminish as general and special scientific knowledge becomes more accessible to the public.

Mystery and superstition are frequently observed among the ignorant, and are somewhat in evidence among the more cultured. During the past centuries this fact has enabled unscrupulous charlatans to organize sects and impose upon the public, which, in the consideration of medical questions, cannot always discriminate between the true and the false. Some of those who have originated and promulgated new sects ostensibly for the prevention and cure of disease may have been sincere, but, be their motives what they may, we certainly have the right to question the results, and even to interfere when their acts so far oppose our established sanitary regulations as to endanger others. We can all think of more than one such organization which has come into existence during the present generation. Most of these secure the results which they claim only in so far as the condition which they treat is amenable to mental suggestion, but there is one which aspires to being called a school of medicine whose only claim lies in a so-called knowledge of certain manipulations to relieve and prevent disease. A skilled mas-

seur can accomplish all the beneficial results incident to such manipulation, and the medical profession, recognizing this fact, should not fail to emphasize its knowledge of the subject when the followers of this sect request special rights and privileges.

In closing this lecture, I believe that nothing can more fittingly occupy our attention than a brief review of the work of Louis Pasteur, who has justly been called the father of preventive medicine. Pasteur, an enthusiastic chemist and scientist, not a physician, undertook and solved some of the most important questions in prophylaxis, which, in their results, have been of untold value. His first results in this direction originated in his efforts to help a manufacturer of beet-root alcohol, which industry was suffering severely because of the ignorance of the cause of fermentation and consequent inability to control it. He discovered the cause of fermentation to be micro-organisms which he could control, thus perfecting the alcohol and wine industries of France, saving millions of dollars to his country.

The government of France, attracted by these results, requested him to discover and check, if possible, the cause of the silkworm pest, which had nearly destroyed the silk industry. In five years he had most thoroughly accomplished his task.

During the Franco-Prussian war he recognized the great mortality among the wounded, which to him was further evidence of germ life, and found that it could in a great measure be prevented by heat sterilization of dressings and the use of antiseptics.

Another of his important achievements was the discovery of preventive inoculation for anthrax, practically eradicating a disease which was a great menace to the animal industry of France and other countries.

His final work was the discovery of the preventive inoculation for hydrophobia.

We can scarcely conceive the far-reaching results of this one man's discoveries in preventive medicine, and his work established the following general principles:

Each fermentation is caused by the development of a special micro-organism.

Many, if not all, infectious diseases are produced by the development within the individual of a specific micro-organism.

The micro-organism of some infectious diseases, cultivated under certain detrimental conditions, is attenuated in its pathogenic activity, and from a virus it becomes a vaccine.

So much done by a lay member of our profession should stimulate in all of us the spirit of investigation, and there will long exist abundant opportunity in the many similar questions still unsolved.

4287 Olive street.

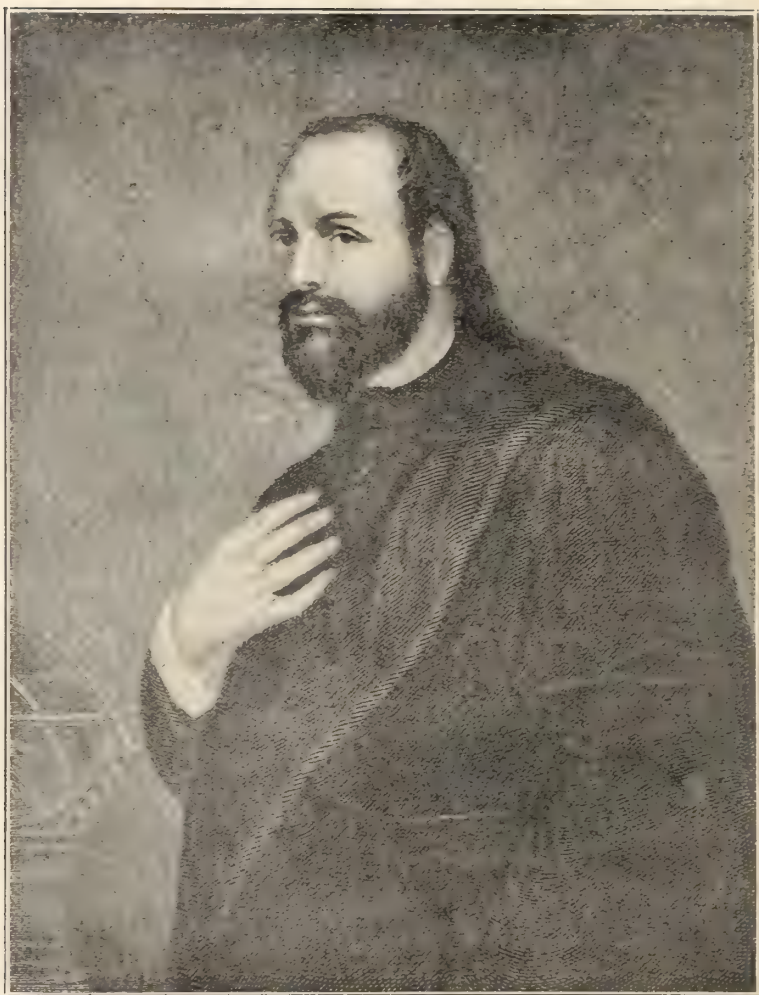
SIR KENELME DIGBY, 1603-1665.

BY JAMES MOORES BALL, M. D., of St. Louis, Missouri.

One of the most interesting characters of the seventeenth century was Sir Kenelme Digby, physician, scientist, warrior, mystic, Rosicrucian and Paracelsist, philosopher, cook and literatus. The son of the ill-fated Sir Everard Digby, he was only three years old when the father expiated on the scaffold the part he had taken in the gunpowder plot. Although springing from attainted blood, Sir Kenelme secured ample funds and was given the advantages of wealth. In 1621 he traveled to Madrid with the Prince of Wales, afterward Charles I., and two years later was knighted by James I. From that period until his death he was constantly before the public. In 1628 he served as a naval commander in an expedition against the Venetians and Algerines, whose ships he destroyed off Scanderoon. His victory was celebrated in verse by Ben Jonson. On his return Digby was for years interested in literary and religious subjects. "It is difficult to say to which he was most devoted—his king, his church, literature or his beautiful and frail wife, Venetia Stanley, whose charms fascinated the many admirers on whom she distributed her favors, and gained her Sir Kenelme for a husband when she was the discarded mistress of Richard, Earl of Dorset."²

It is not as the warrior, literary critic, political prisoner, gallant courtier, or member of the Royal Society that Sir Kenelme most interests the medical profession; but it is as an advocate of the Sympathetic Powder that our attention is arrested. This preparation was heralded as a wonderful discovery and attention was first called to it by Sir Kenelme himself in a "Discourse upon the Cure by Sympathy, pronounced at Montpellier, before an assembly of Nobles and learned men." The cure was brought about by dipping a blood-stained garment from the injured person into a solution of the sympathetic powder. The presence of the patient was not necessary, for the cure could annihilate distance. As a proof of this power Sir Kenelme relates many cures. A Mr. Howel's hands were severely cut by a sword. The surgeons applied plasters and bandages; after five days gangrene was feared; a garter, stained with the gentleman's blood, was given to Sir Kenelme, who, without stating what he was about to do, soaked it in a solution of the sympathetic powder. "I do not know what ails me," the patient said, "but I find that I feel no more pain. Methinks that a pleasing kind of freshness, as it were a cold napkin, did spread over my hand, which hath taken away the inflammation that tormented me before." A few days later while dining, Sir Kenelme told the Duke of Buckingham of the wonderful powder; after dinner Digby took the garter out of the solution and dried it before the fire. Immediately a serv-

* Jeaffreson: A Book About Doctors, p. 49, New York, 1861.



SIR KENELME DIGBY (1603-1665.)

From the Original of Vandyke in the Bodleian Gallery, Oxford. Engraved by Lightfoot.

ant came to tell the distinguished company that Mr. Howel's hand was paining him, as if "it were betwixt coales of fire." The garter was then replaced in the solution much to the joy of the patient, for he was at once relieved. This decisive case occurred in London in the reign of James I., who believed in Digby's powder. Another way of using the famous preparation was to anoint the weapon causing the wound with some kind of ointment or with lard, and then the sympathetic powder was sprinkled upon the weapon. The patient, of course, knew what was being done for him. His wound was brought together, wrapped in clean linen rags, and left undisturbed for seven days; at the end of this time the wound was usually found to be healed. Gallant warriors, prominent statesmen, pedantic authors, brilliant wits and tiresome clergymen, sounded the praises of this seventeenth century method of faith-healing. The poets had their turn also. Dryden, in the *Enchanted Island*, causes Ariel to say:

Anoint the sword which pierced him with this
Weapon salve, and wrap it close from air,
Till I have time to visit it again.

Digby's powder is said to have been pulverized white vitriol. The secret Sir Kenelme claimed to have had from a Carmelite friar.

The death of this eminent gentleman took place in 1665, and was the occasion of this epitaph by R. Ferrar:

Under this tomb the matchless Digby lies—
Digby the great, the valiant and the wise;
This age's wonder for his noble parts,
Skilled in six tongues, and learned in all the arts.
Born on the day he died—the eleventh of June—
And that day bravely fought at Scanderoon.
It's rare that one and the same day should be
His day of birth, and death, and victory.

To the credit of Digby it must be said that in one of his books, he shows "how one sense may supply the want of another," and describes the teaching of a dumb man to speak. What is now called the beautiful art of "lip reading." Sir Kenelme Digby described two hundred and fifty years ago as "hearing by the eyes." A Spanish nobleman was born deaf and "consequently he was dumb, for, not being able to hear the sound of words, he could never imitate them." A priest undertook to teach the young man and met with great success: "In a word, after strong patience he brought the young lord to speak as distinctly as any man whosoever, and to understand so perfectly what others said that he would not lose a word in a whole day's conversation."

OSTEOLOGY AND THE GENERAL PRACTITIONER.

BY VILRAY PAPIN BLAIR, M. D., of St. Louis.

The vast increase in subjects that have entered into the curriculum of the medical school without a proportionate increase in the time devoted to a medical course has rendered necessary a rigid process of selection of studies. Exactly the same need of selection is forced upon the attention of the practitioner. Not only must he determine which branches he shall retain, but also what parts of these branches add to the utility of his equipment.

The cry is for more scientific practitioners, but the lines between the practitioner and the pure scientist are every day being more sharply drawn, and it is in proportion to the ability of the latter to furnish his science in a predigested form that he is useful to the former, and through him to the world at large.

The mental habit of men who have practiced for years is already established. What they demand is not training, but marketable facts; and presenting these facts in a concentrated, tenable form is the best way to prevent the much overburdened practical men not only from yielding to the consciousness of the impossibility of retaining the whole subject, but also from losing sight of the few practical points in any one branch.

This preamble applies very particularly to osteology. Every physician should know the general plan of the skeleton, and have special knowledge where his practice demands it. It in no way belittles the science of osteology to believe that success depends not upon how much one knows, but upon how much of his knowledge is useful to him. As long as the demands upon the memory of the general practitioner remain beyond his capacity, his practical value will be increased by a judicious limitation of the number of things that he attempts to memorize. In presenting the following I do not mean that the points contained are in themselves sufficient. Without a general knowledge of the skeleton they would be useless, but when one has once learned the bones he retains a fairly good idea of their outline and the size and shape of the epiphyses. Add to this the points to be enumerated, and the general practitioner is osteologically equipped to handle the cases which he is commonly called upon to treat, and when more special knowledge is demanded they will carry him till he can consult.

The Skull.—A straight line from the root of the nose to the occipital protuberance marks the division between the brain case above and the face and neck below. The face itself is composed of processes of bone which inclose a number of cavities, the general relations of which are to be remembered. The roof of the orbits and nasal cavity is formed by the floor of the cranium, which is here very thin. The floor of the orbit

is the roof of the maxillary antrum, while the hard palate is the floor of the nose. The upper molars and second bicuspid teeth are beneath, and may extend into the antrum. The ethmoid cells lie between the orbits and the upper part of the nasal cavity, while below the latter is separated from the antrum by a thin perforated wall of bone. The mouth is bounded laterally by the alveoli and teeth, and the body and ramus of the lower jaw. The nasopharynx is roofed by the base of the skull, while the posterior wall of the pharynx is in relation with the bodies of the cervical vertebrae. With exception of the maxillary and mastoid antra, the accessory cavities do not begin to attain any considerable size before puberty. The antrum opens laterally, while the frontal sinus and ethmoid and sphenoid cells open downward into the nose. The Eustachian tube connects the middle ear with the nasopharynx, while the mastoid cells and antrum have free communication with the middle-ear cavity. The lachrymal canal extends from the fore part of the orbit to the inferior meatus of the nose.

The skull wall in the temporal region is thin and deeply situated. The zygoma stands out free and in line with the middle of its upper border; the middle meningeal artery grooves the deep surface of the skull, while from here its branches extend upward or backward and upward. The supra orbital notch is at the junction with the inner and the outer two-thirds of the upper border of the orbit, while the infra orbital foramen is a quarter of an inch below the middle of the orbit. The meatal foramen is always below the position of the second bicuspid tooth, its vertical position varying with age.

In the *neck* is found the carotid tubercle, at the level of the cricoid cartilage. The transverse process of the atlas can always be felt in front of and below the mastoid process, and the styloid process may sometimes be distinguished further forward. The hyoid bone is situated but slightly below the lower jaw.

The most important thing to remember about the *sternum* is that the transverse ridge, about one and one-half inches below the upper end, is at the level of the second costal cartilages. The lower end of the sternum may be bifurcated or fenestrated.

Of the *ribs*, seven (rarely eight) reach the sternum through their cartilages, while the tenth is the lowest of the connected series. The twelfth rib may be short, and the first or the twelfth may be absent. Ribs may occur in the cervical or lumbar spine.

With the ribs we must consider the *vertebrae*. Of these, omitting the pelvic, the lower in the series are the larger. The neural arches lie behind the bodies in all. The bodies and processes are so formed as to allow flexion, extension, lateral movement and rotation in the cervical spine, rotation in the dorsal, and flexion, extension and lateral movement in the lumbar. The spine in the thoracic and pelvic portions has curves with concavity forward to accommodate the viscera, while in the

neck and lumbar portions there are anterior compensatory convexities. The upper and lower borders of the body of the sternum mark the levels of the second and ninth intervertebral discs, while the body of the fourth lumbar lies close behind the umbilicus in the undistended abdomen. The seventh cervical or first dorsal is the "vertebra prominens." The inferior angles of the scapulæ reach the level of the eighth dorsal spine and mark the seventh intercostal space, while the spine of the fourth lumbar is at the level of the highest part of the iliac crest.

Turning to the *upper extremity*, we start with the *clavicle*, the inner end of which rests on the upper angle of the sternum, while its outer is attached both to the tip of the acromion and the body of the coracoid. It forms the sole bony attachment of the shoulder to the trunk; in its inner two-thirds it follows the curve of the ribs, while the outer third lies transversely, giving the hollow to the shoulder. The outer third of both lie in the same transverse axis. The clavicle, the acromion and the spine of the scapula form a continuous subcutaneous bony line, its most prominent external point being the tubercle of the acromion which is used as a measuring point. Below this bony girdle, from within outward, may be felt the tip of the coracoid, and the lesser and greater humeral tuberosities. The bicipital groove lies between the two latter, while the former makes a convenient measuring point for the inner border of the limb. Both acromion and coracoid partially overhang the head of the humerus, which latter may be felt in the apex of the axilla when the arm is abducted.

Around the *elbow* the three points, internal condyle, olecranon and external condyle, are about on a line when the forearm is extended, the olecranon slightly nearer to the internal condyle. The external condyle is the lower, and the head of the radius may be felt just below it posteriorly. In flexion the olecranon descends so that the three points form a triangle.

In dealing with the *forearm* it should be first remembered that the ulna is attached to the humerus, that the radius which is broad below carries the hand, and that the lower end of the radius revolves around the ulna. When the elbow and the front of the hand rest on a flat splint the lower ends of the ulna and radius do not touch the surface. The posterior border of the ulna is subcutaneous throughout, ending in the styloid process below which does not descend as far as the styloid of the radius. In supination it is the styloid process of the ulna that is felt posteriorly, while in pronation the articular radial surface becomes prominent. He who would disarticulate fingers should remember that the joints are beyond the prominence of the knuckle at distances of about one-third of an inch in the first joint, one-sixth of an inch in the second and one-twelfth of an inch in the third. Owing to the obliquity of the inferior articular surface of the humerus, the radius and ulna, in extension, pass downward and slightly outward, so that the axis of the upper limb passes

through the head of the humerus, the head of the radius and the lower end of the ulna. This gives the all-important carrying angle.

With the *pelvis* proper we shall not deal, as it is included in the obstetrical knowledge of the general practitioner, but it will not be out of place to mention here that the crest of the ilium may be outlined in its entire course from the anterior superior spine in front to the posterior spine behind. The spine of the pubis is always palpable. These points are used in dealing with the lower extremity. The head of the *femur* lies just below the middle of Poupert's ligament and the cotyloid notch of the acetabulum is in its lower part. With the thigh extended the upper end of the great trochanter is at the level of the pubis and may always be identified by rotating the thigh. All bony points about the *knee* are more or less distinctly palpable, and when the joint is flexed a certain amount of rotation of the leg is permitted which will accurately locate the articulation. The adductor tubercle is about the middle of the inner surface of the internal condyle, while the patellar tubercle of the tibia and the head of fibula may be felt on a common level below the joint. Of course everyone is familiar with the outlines of the subcutaneous internal surface and anterior border of the shin bone. The internal surface is continuous below with the internal malleolus. The anterior border is concave externally above to give room for the anterior tibial muscles, and has a reverse compensatory curve below. The fibula forms the external malleolus, while the mass of bone above the ankle joint belongs to the fibula. Unless very special study is given to this part it is somewhat difficult to remember the outlines and to identify all the tarsal bones, but the following points should be kept in mind:

The Foot.—The foot as a whole forms first, a longitudinal arch, the inner border of which is longer than the outer. The former extends from the internal tubercle of the os calcis posteriorly to the distal end of the first metatarsal bone, while the outer border of this arch extends from the external tuberosity of the calcis to the proximal end of the fifth metatarsal bone, which can always be felt as a prominent tubercle about the middle of the outer border of the foot. Besides the longitudinal arch, there is a transverse one most marked at the heads of the metatarsal bones. The outer end of this arch rests on the ground, while the inner end is swung into the highest part of the internal border of the longitudinal arch; the astragalus articulates with the tibia and fibula near the posterior part of the foot, resting below on the calcis. The anterior ends of both the astragalus and the calcis articulate with the remaining mass of the tarsus. The bony points that rest upon the ground in a show-molded foot are the tubercles of the calcis, both ends of the fifth metatarsal bone and the sesamoid bone found under the distal end of the first metatarsal bone.

One of the most difficult things to remember is the times of appearance of ossific centers and union of the epiphyses, but until further research

shows a more practical bearing of these data. I believe the general practitioner will be well equipped with the following points:

All long bones greater than the metatarsal, with the exception of the clavicle, have one or more epiphyses at each extremity. The clavicle has one only, at the sternal end.

The *phalanges* and first metatarsal and first metacarpal bones have epiphyses at their proximal ends, while the remaining metacarpal and metatarsal bones develop them at their heads. That there is an epiphysis at each end of each vertebral body should not be forgotten by him who has successfully treated Potts' disease in the growing spine. The innominate bone is developed by three pieces, which meet in the floor of the acetabulum and unite towards adolescence. The coracoid process of the scapula develops from an independent center. The period of union of these epiphyses is between sixteen and twenty-five years, but a more special knowledge of the following is useful: The head of the humerus has united at twenty years, all of the epiphyses about the elbow at eighteen years and those on the lower ends of the forearm bones at twenty years. The head of the femur has united at about twenty-one years, the lower end at twenty and the upper end of the tibia at twenty-one. The upper jaw is developed by four pieces, the two on each side uniting with the two on the opposite side at the middle, the premaxillary bones carrying the two incisor teeth on each side. The development of the vault of the skull is part of the armamentarium of the obstetrician. Besides the general symmetry of the skeleton, we all know of the homology of the thoracic ribs with the cervical and lumbar transverse processes, which accounts for variations in their respective average numbers. The scapula corresponds to the innominate bone, the humerus to the femur, etc., but owing to the limbs having rotated in opposite directions the tibia and great toe are situated to the inner side of the lower limb, while their homologues, the radius and thumb lie to the outer.

While not exactly a part of osteology I do not think it out of place to mention that the strongest parts of the shoulder and hip joint capsules—the bands that are used as guides in reduction of dislocation by manipulation—pass, in the first instance, across the top of the shoulder joint, and, in the second instance, vertically in front of the hip joint, both bands passing from the edge of the socket to the upper end of the shaft of the bone, not directly to the head.

A subject in close relation to the above would be the muscles which influence the positions of the bones. These are so numerous that they cannot be mentioned here, though they could be selected and grouped to advantage.

PROPER DIET IN THE TROPICS.

By H. W. WILEY, M. D., Washington, District of Columbia.

CHIEF OF BUREAU OF CHEMISTRY, UNITED STATES DEPARTMENT OF AGRICULTURE.

The question of a proper diet in the tropics is of importance in connection with the subject of tropical diseases.

Experience has shown that a change of climatic environment always necessitates a change in the character of the food. It is evident, without elucidation, that a less quantity of animal heat is needed in the tropics as compared with the greater quantity needed in the northern latitudes. As the production of heat is one of the chief functions of food, a corollary of the above proposition is that less food is required in the tropics than in temperate or northern latitudes. In other words, it may be said that if 3,000 calories per day are required at a latitude of 45 degrees, 2,500 per day would be sufficient at the equator.

It so happens that nature provided very abundantly in each zone the character of food which is best suited for those regions. In the colder zones fats and oils are provided, in the temperate zones cereals, meats and vegetables, and in the tropics fruits of every description.

The bureau of chemistry has lately taken up a study of tropical fruits for the purpose of determining their food value. Their general deficiency is in protein. This is supplied by combining with the fruits a diet of nuts, which are usually rich in protein.

The principal starchy foods of the tropics are derived from the cassava or nearly allied plants. One great peculiarity, as has been noted, in the natural tropical food is the small quantity of protein. The recent experiments of Chittenden seem to indicate that even in temperate zones very much larger quantities of protein are consumed than are necessary.

The natural tendency to repose which a tropical climate induces leads to the belief that there is not such a consumption of nitrogenous tissues produced by active physical exercise as in temperate and northern climates. It appears, therefore, that any large excess of protein in a tropical diet is a contraindication. The starch and sugar furnish the heat and energy of tropical diet. It is evident, therefore, that the ratio of carbohydrates and fat to the protein matter is very much larger in the tropics than in the temperate and northern regions. This may seem to be a contradiction of the previous statement that a tropical diet should contain a small quantity of heat-producing elements. This is true only in a mass sense—that is, as regards total quantity, and is not true in the proportional sense—that is, in relation to the amount of protein.

To summarize, a tropical diet should contain less calories than a diet in the temperate regions and decidedly less protein.

EDITORIAL COMMENT.

THE DIFFERENCE.

There are certain places in this world where it is good for a physician to live; there are other places in which it is hard for a physician to live and be good. To a Western physician the study of places belonging to the former class open a field of thought the chief question in which is what is the difference, and why is there such a difference?

To answer these questions would mean a solution of many of the vexing difficulties ever present to those whose lot has been cast in places of the second category. Wherein lies the difference? Many are the differences, and to the observant mind of our visiting physician these differences are more fundamental than they should be. It is a sight to fill him with wonder to note that in this eastern city there is a sincere appreciation by one group of men of the work done by another. He is further mystified by the fact that certain men of one group are not personal friends of the other, but on the common ground of good work done they meet, discuss, praise, condemn, as each sees fit. It is borne slowly upon our observer that there is such a thing as disinterested enthusiasm, for knowledge pure and simple wholly apart from the personalities of those who foster it. In speaking of men in this city it will be found that the usual question is, what has he done, not who is he, and not to what group he belongs. If he has done anything worthy, there is no place to which he may not enter, provided always he goes there in furtherance of his work. For this reason our observer finds that the hospitals, clinics and laboratories are filled with eager workers, no two of whom care a penny for the mechanism involved in getting them there. This creates the mental calmness, the absence of worry, which form so essential a part of the atmosphere of good work. The foundation on which this spirit rests is the influence which a university exerts upon those who come under its power and upon many others who are in contact with it. A curious difference to his own city this represents, where only too often the promise contained in a man's previous training is a bar to the position he is justly entitled to aspire to. On the one hand is the cultivation of latent possibilities; on the other, the sterilization of promising growth. This, and much more, impressed our observer, and he dwelt long in the search for the reasons of the difference; and it came upon him once with great suddenness that the difference was not due to population, environment, climate nor conditions, but solely to the quality and the type of men. He was led in this way to attempt to study the leaders in medicine in these two cities, and he found what he thought was the solution of his problem.

The chiefs of medicine carry with them a peculiar responsibility, for they deal with a science and art that has only partially awakened. They must view the time of their own passing away with calmness or not as they leave behind them those who will and are prepared to further awaken the science which has slept for so long, and the art which has become so choked with bad tradition that its development must begin almost anew.

If this desire is strong in the mind of the leader it becomes strong in the mind of the follower, and thus is created the body of good tradition which connects one generation of physicians to the next. In this desire most of the petty motives, the fundamental jealousies, steadily lose their power to disturb, and the leader opens wide the opportunities which have become his own. To dislike a man but to applaud his work, to see in your own enemy perchance the same power, the same evidence toward something better so apparent to yourself, is part of the task which falls so easily upon the shoulders of a leader. Perhaps, after all, it is just this broader tolerance, just this separation from the smallness of the average which makes the one a leader, and without it the other a follower.

Does all this really exist in the Eastern city visited by our Western physician? Or is this only a dream city, where the gentle physician lives resplendent in the halo of his own virtue. It cannot be a dream city, because there is no need for doctors there.

Perhaps it really exists, and it is there for those who come to see and for those who bring back with them some of the spirit, fanciful though it may be, which seems so prevalent there.

CONCERNING MEDICAL HISTORIES.

In this issue we present several original articles on the history of medicine. In view of the great interest which American physicians have of late manifested in this subject, a few data on medical histories may be not out of place.

It is a subject for regret that English and American physicians have not produced works on the history of medicine commensurate to their contributions to practical medicine and surgery. In this respect we, and our English cousins, are behind the French and the Germans. The French have been busy writing biographic dictionaries of medical men, and composing monographs dealing with particular periods in the history of medicine. The *Dictionnaire Historique de la Médecine Ancienne et Moderne* of Dezeimeris (Paris, 1828-1837) is well worthy of mention. Another valuable work is the *Biographie Médicale par ordre Chronologique*, by Bayle et Thillaye, Paris, 1855. Malgaigne, in his *Œuvres Complètes d'Ambroise Pare*, Paris, 1840, has given a great deal of information concerning the state of surgery in the fifteenth, sixteenth and seventeenth centu-

ries. A noted writer, whose philosophic work was early translated into English, was Renouard (*History of Medicine from its Origin to the Nineteenth Century*, Cincinnati, 1856). A large number of monographs written by eminent French medical historians could be mentioned, but space forbids.

Among the German medical histories we may mention the works of Lessing, *Handbuch der Geschichte der Medizin*, Berlin, 1838; Friedlaender, *Vorlesungen ueber Geschichte der Heilkunde*, Leipzig, 1839; Isensee, *Die Geschichte der Medicin und ihrer Hulfwissenschaften*, Berlin, 1840; Hirschel, *Compendium der Geschichte der Medicin*, Wien, 1862, and Baas, whose work has been translated into English, *Outlines of the History of Medicine and the Medical Profession*, New York, 1889. Puschmann's *History of Medical Education*, London, 1891, is a translation of a valuable work by a noted Vienna professor. However, it happens often that the German history is noted more for ponderosity than for essential merit. In thoroughness, in readability and in logicalness, not one of the works mentioned above can compare with Kurt Sprengel's *Versuch einer Pragmatischen Geschichte der Arzneikunde*, Halle, 1792-1803. The five volumes of Sprengel's masterpiece form a veritable mine from which later writers have taken many valuable treasures, which have been dealt out to the medical profession, sometimes in their original form, sometimes slightly modified.

When now we turn to English and to American works on medical history we are forced into an apologetic attitude. Not that we would deery the value of special articles and monographs, such as have been written by Greenhill, Watson, Dalton, Gross, Pilcher and George Jackson Fisher, but because there exists no monumental history of medicine written originally in the English language. Freind's *History of Physick*, London, 1750, takes up the subject from the time of Galen and brings it to the beginning of the sixteenth century. It concerns chiefly the medical practice of the middle ages. Northcote's *Concise History of Anatomy*, London, 1772, contains much valuable information presented in a jumble of Latin and English. Walker's *Memoirs of Medicine*, London, 1799, treats in a scholarly manner of medicine among the Greeks, Romans and Arabs, of the discovery of the circulation of the blood, and of the state of medicine in the eighteenth century. Hamilton's *History of Medicine, Surgery and Anatomy*, London, 1831, purports to cover the subjects "from the creation of the world to the commencement of the nineteenth century." It consists of two small volumes of 419 and 306 pages respectively. In the same year appeared Moir's *Outlines of the Ancient History of Medicine*, London, 1831, in a duodecimo volume of 278 pages. The sizes of the volumes are mentioned simply to show how some very able writers have attempted to cover vast subjects in a small compass.

Meryon's work, *History of Medicine*, London, 1861, was so severely

criticised that the second volume never appeared. In recent years two valuable English works have appeared by Berdoe, *The Origin and Growth of the Healing Art*, London, 1893, a popular history of medicine, and Withington, *Medical History from the Earliest Times*, London, 1894. Among works of lesser magnitude but of conspicuous merit we may mention South's *Memorials of the Craft of Surgery in England*, London, 1886; Caton's *Temples and Ritual of Asklepios*, 1899; Foster's *Lectures on the History of Physiology*, Cambridge, 1899; and Payne's *English Medicine in the Anglo-Saxon Times*, Oxford, 1904.

In this country, although no complete history has been written—the works of Dunglinson and Park being merely epitomes—considerable creditable work has been done. Thacher's *American Medical Biography*, Boston, 1828, contains a delightful chapter in the history of medicine in America. Thacher's work was continued by Williams, *American Medical Biography*, Greenfield, Massachusetts, 1845. Both of these works contain portraits, as also did Atkinson's *Physicians and Surgeons of the United States*, Philadelphia, 1878. A book which is not generally known, but one which reflects great credit upon the scholarship of its author is Fort's *Medical Economy During the Middle Ages*, New York, 1883. Written by a lawyer, it is a valuable contribution to the history of European morals from the time of the Roman empire to the fourteenth century.

Recently Packard, *The History of Medicine in the United States*, Philadelphia, 1901, and Mumford, *A Narrative of Medicine in America*, Philadelphia, 1903, have placed the profession under great obligations. Wright's *Nose and Throat in Medical History*, St. Louis, no date, shows how interestingly one of the special departments of medical history can be presented.

JAMES MOORES BALL.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

The Alkalinity of the Blood in Acute Exanthematic Infectious Diseases.—KIREEFF (*Centralblatt fuer Innere Medizin*, No. 19, 1905).—The reaction of fresh blood is constantly alkaline to litmus. "The degree of alkalinity varies under normal conditions within certain limits. Various pathological conditions cause even greater variations; among them may be mentioned fever and all acute febrile diseases. Different authorities have reached different results in their determinations of the alkalinity of the blood in fevers, but the most of them have found it diminished.

The author's experiments show the normal alkalinity of 100 ccm. of blood to be equivalent to 159.9—213.2 mg. Na OH.

They found in repeated examinations of fifty cases of acute febrile diseases, such as variola, varioloid, scarlatina, morbilli, typhus, etc., that the alkalinity of the blood either remains normal or is slightly diminished. Typhus exanthematicus was found to be the only exception, invariably showing an increased alkalinity. He lays stress upon this point as an aid in the different diagnoses.

Acute Primary Colitis.—KOKORIS (*Wiener Klinische Wochenschrift*, No. 20, 1905,) calls attention to the fact that acute primary processes in the colon, and especially the ascending colon, may simulate appendicitis and perityphlitis, and may be readily mistaken for such. The variations in the position of the appendix necessarily render the diagnosis of such conditions in the colon all the more difficult. The author recites a case in which the clinical symptoms throughout were typical of appendicitis, while the autopsy revealed a perfectly normal appendix and cæcum and a localized inflammatory and ulcerative process in the ascending colon.

The Value of Large Doses of Olive Oil in the Treatment of Diseases of the Stomach.—BLUM (*Berliner Klinische Wochenschrift*, No. 20 and 21, 1905,) conducted a series of observations with a view to determining the influence of olive oil upon different diseases of the stomach. He found that it was borne badly in large doses, and that very few stood small doses well. In cases of hyperchloridria, with or without hypersecretion, the oil acts favorably in the reduction of the acidity. It improves the condition of the bowels and improves nutrition. However, these effects were not permanent.

In ulcer of the stomach and duodenum, as well as in organic stenosis of the pylorus, a favorable influence was not noticed. In fact, oil seems contraindicated in pyloric stenosis of a marked degree. In a case of spasm of the pylorus the oil gave no results whatever.

A Case of Glycosuria Following the Therapeutic Employment of Quicksilver.—FAUCONNET (*Muenchener Medicinische Wochenschrift*, No. 20, 1905,) observed the development of glycosuria in a luetic patient who was receiving injections of mercury. The relationship between the mercury and the glycosuria seemed self-evident. There were no other evidences of intoxication. The glycosuria developed after the patient had established a certain degree of tolerance, and after there had been an accumulation of the drug in the organism. There was nothing to point to a kidney lesion of any kind, nor was it possible to prove that the phenomenon was due to a transitory disturbance of metabolism. In order to have cleared up the case satisfactorily it would have been necessary to examine the blood quantitatively for sugar, before, during and after the cure. This, however, was not possible.

Though the author considers the phenomenon the result of an idiosyncrasy, he feels that this case should prompt those using mercury to examine systematically for sugar, as has long been the custom for albumen. Only in this way will it be possible to learn how often glycosuria occurs as the result of mercury injections.

Dangerous Complications in the Starvation Treatment of Peptic Ulcers of the Stomach.—REICHMANN (*Archiv fuer Verdauungskrankheiten*, Vol. XI, part 2,) calls attention in the article to two disturbances which often accompany the starvation treatment of peptic ulcers of the stomach. One of these complications is rapid loss of strength in the early part of the treatment. This is often so marked that it leads to fainting attacks, disturbances in the heart's action, palpitation, dyspnoea, etc. When this train of symptoms arises it becomes necessary to interrupt this treatment and resort to some other. This complication is most apt to occur in neurasthenic individuals.

The second complication which the author has observed is the development of inflammatory processes in the parotid gland, with pus formation and all of its consequences. He has met with but three cases in twelve years' experience in the treatment, but attributes this to prophylactic measures which he has adopted in these cases. Though no bacteriological examinations were made, he attributes this phenomenon to the accumulation of pus producing bacteria in the mouth, due to the absence of motions which cleanse the mouth when eating and the diminution of the salivary secretions. One of these factors mechanical and the other physiological are in a measure dispensed with in those taking starvation treatment, and bacteria are thus permitted to accumulate in the mouth. The author for the past few years has avoided this unpleasant complication through the frequent cleansing of the mouth, teeth, gums, etc., with a 4 per cent. boric acid solution. Since adopting these measures he has not met with a single case.

In spite of these unpleasant occurrences, however, the author still highly recommends this procedure in the treatment of peptic ulcer of the stomach.

Pathogenesis of Colic.—NOTHNAGEL (*Archiv fuer Verdauungskrankheiten*, Vol XI, part 2), in view of the recent discussion concerning intestinal colic, considers the subject here at some length, with special reference

to the history of colic and its pathogenesis. He believes that the pain has its origin in the intestine, and that "colic," in its pathogenesis and its clinical picture, must be considered a special kind of intestinal pain. The primary factor in its development is a tetanic contraction of the muscle fibers of the intestine. The tetanus leads to an ischæmia or anæmia of the walls of the intestines. The anæmia in turn produces an adequate stimulation, through which the sensory nerves of the intestines are irritated, and paroxysms of pain are the result. The author is unwilling to state definitely whether this theory may be applied to other organs with unstriated muscle fiber.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

Ligation of the Aorta; Its Physiologic and Therapeutic Meaning.—KATZENSTEIN (*Archiv. fuer Klinische Chir.*, Band 76, Heft. 2).—The author has done a large number of animal experiments in the effort to show the various results which may follow ligation of the largest artery. In fact, he did 105 experiments upon 45 animals, most of them dogs, and came to the conclusion that the peripheral pulse ceases at once if the vessel be completely occluded. Moreover, he proved that this had not been completely accomplished in many of the cases where this operation had been performed upon the human. He proved, too, that the arterial tension increases greatly and remains so during the days following the operation, although certain circumstances may prevent an immediate increase after ligation. He showed that the collateral circulation which prevents gangrene of the extremities, is established in an immense number of vessels too small to be named, both those in muscles and others. It is interesting to note that a tremendous hypertrophy of the heart takes place as an evidence of nature's effort to overcome the obstruction in the circulation. The paralysis of the lower extremities and bladder is shown to be of a peripheral type and to have nothing to do with an anemia of the spinal cord. Degeneration is seen in the muscles and great disturbance in the circulation is noted in the wall of the bladder, leading sometimes to perforation, but usually these manifestations are transitory. This operation has been done fourteen times upon the human, and in every instance the operation has produced death directly as our author shows, although in one or two instances this was considerably delayed. The operation can promise absolutely nothing of therapeutic value. It should, of course, never be done for hemorrhage, because there are easier ways of controlling the same, and as to curing an aneurism of the aorta, that is impossible, since the vessels which go off lower down will very soon develop enough to supply the sac with plenty of blood. A serious heart lesion follows it, the aorta may rupture at the site of ligation and in addition to being very dangerous the procedure can do no good.

Comparative Surgery with Illustrative Cases.—FARRIS, THATCHER, ORTSCHILD and BEALL, and an Introduction by Harvey Cushing (*Bulletin of Johns Hopkins Hospital*, May, 1905).—We have in this article another evidence of the painstaking work that is being done at Johns Hopkins towards improving our methods of teaching surgery. Dr. Cushing urges the importance of a veterinary hospital in connection with this work. He shows plainly that the cadaver can never be useful in the highest sense for the teaching of surgical technique. This should be done upon animals, and the operation should be carried out for pathological conditions just as they are in the human wherever possible. This can never be done upon healthy animals, but is only possible where we have diseased specimens, and where we have facilities for taking care of them. The various amputations and ligations which are taught upon the cadaver are rarely ever done on the living, and surely the student does not in this way learn to control hemorrhage and to practice asepsis, hence the value of Cushing's new idea. In Baltimore, when a diseased dog is taken in, histories of similar human patients are used, and in this way all the details of such a case are studied. In the article which is the subject of this review there are reported thyroid cysts, uterine prolapse, inguinal hernia and several tumors on the dog. The article is certainly worthy the perusal of all who are engaged in the teaching of surgical technique.

Complete Section of the Ulnar Nerve of Fourteen Years' Standing Cured by Operation.—CHAPUT (*Bullet. et Mem. de la Société de Chirurg.*, de Paris, May 23, 1905).—This patient had all the characteristic symptoms of the injury mentioned with atrophy and anesthesia in the region involved. The author operated, resecting a small neuroma on each end of the divided cord, then he split the upper end and invaginated the lower into it with a catgut suture. Two weeks later the anesthesia had disappeared and motion had commenced to return. There has been steady improvement since and the author calls special attention to his method of reuniting the ends.

The Results in the Heidelberg Clinic Obtained by the Operative Treatment of Intestinal Obstruction.—SIMON (*Beit. zur Klin. Chirurg.*, Band 45, Heft. 3).—At Heidelberg, as elsewhere, the results in this line of work have been none too brilliant owing to the fact that the cases, even from the best internists, were delivered too late to do any good most of the time; still, enough cures were accomplished to serve as a matter of encouragement for future surgical efforts. The obstruction was due in seven instances to strangulation by bands, and of these patients two recovered. In one of these a resection had been made. Where the trouble was due to volvulus of the sigmoid, the characteristic local distention was no longer to be made out, because the cases were always too late. Where the obstruction was due to shrinkage of the mesentery, or to some external anatomical change other than strangulation by a band, the symptoms were gradual in their onset and there was always a history of intestinal colic, whereas the onset was always very acute in strangulation. Ten patients in this class were operated upon and five recovered. The important symptom of sigmoid obstruction is always distention of

the cæcum, and is especially marked if the case is seen early. Obstruction due to the passage of a large gall stone through the intestine is usually accompanied by the affected loop dropping down into the pelvis and the symptoms being originally referred to this site. The author can hardly make a definite choice in all cases between the large incision with complete eventration and the small incision, but he is very positive that the intestine should be opened where it is greatly distended, and where it obscures the field. Where peritonitis is a prominent feature an intestinal fistula is of the greatest value.

Prevention of Shock and Hemorrhage in Surgical Practice.—CRILE (*Journal of the American Medical Association*, June 17, 1905).—Shock is compared to hemorrhage, and it manifests itself as an intravascular bleeding; that is, a lowering of the blood pressure in the arteries and an increase in the veins. In operations upon the head where there is increased intra-cranial tension, there is a corresponding increase in the general blood pressure, and this must be maintained if danger is to be avoided, hence the author frequently opens the skull under local anesthesia. Alternate heat and cold will incite respiration where this has been seemingly interrupted. The careless use of chisel and mallet in opening the skull may produce very grave changes in the medulla, hence this is to be done with the greatest caution. In many instances clamping of the common or external carotid will be of the greatest value in operating about the head and face, though this is not true of all patients. It does not obviate venous hemorrhage, this being best done by the head-up posture. Stimulation of the superior laryngeal nerve may result in inhibition of the circulation and respiration, hence it is always well to give a dose of atropine or paint the interior of the larynx with cocaine before attempting operation upon this membrane. In amputating the extremities the author uses the same careful dissection technique that he does in working on the breast and axilla, ligating the vessels and doing no general retraction en masse.

The Treatment of Gangrenous Prolapsed Hemorrhoids.—BARACZ (*Centralbl. fuer Chir.*, No. 17, 1905).—The old way was to replace the tumors and allow them to slough, but the author makes the very sensible suggestion that we should if possible remove from the patient the constant danger of infection which remains present if he is treated in the way above named. Consequently he suggests that we clamp off the tumors and cauterize them very much in the same way that we would do if we were operating upon a non-gangrenous case, the only difference here being that he cuts off the mass and cauterizes the stump, whereas in an uncomplicated case he would simply allow the mass to separate itself when nature willed it should after burning.

An Experimental and Histological Study of Cargile Membrane.—CRAIG and ELLIS (*Annals of Surgery*, June, 1905).—This interesting article will certainly prove of value to surgeons even though it be, so to speak, of a negative value. In it is shown conclusively that the Cargile membrane accomplishes practically nothing, consequently surgeons will be spared much of the bother which it may have occasioned some in the past.

Neither the chromacised nor the plain Cargile membrane can prevent adhesions in the peritoneal cavity. There is something to show that the chromacised variety does a little good in preventing adhesions when it is wrapped around nerves or tendons. It would seem that the membrane is destroyed by a lytic substance contained in the body fluids. The experiments are too numerous and too rich in detail to allow of a full review in these columns, but to those interested in this subject a perusal of the original article is warmly recommended.

DIAGNOSIS.

IN CHARGE OF

A. E. TAUSSIG, M. D.

Auscultatory Percussion of the Lung.—REINHARD VON DEN VELDEN (*Deutsche med. Wochenschr.*, No. 15, 1905).—The various methods of performing percussion may be grouped under three headings: 1. Percussion, pure and simple, of varying degrees of loudness. 2. Percussion combined with palpation. 3. Percussion combined with auscultation. The writer suggests a new modification of the last-named variety. The physical constitution of an organ influences not only the sound which it emits upon percussion, but also the manner in which that sound is transmitted through the organ itself. The writer advocates the following method of utilizing this fact: The percussion, done by an assistant, is performed by the finger on finger method and as gently as possible. Only the interspaces are percussed since the sternum and ribs have notes of their own that interfere with the detection of variations in the pulmonary resonance. The observer sits on the other side of the patient, placing his ear or his stethoscope in the supraspinous or infraspino-fossa or between the scapulae, as the case may be. The assistant percusses very gently, proceeding horizontally along each intercostal space. The sound passes directly through the lung and is altered by even the slightest change from the normal in the pulmonary tissue. The normal lung transmits a somewhat prolonged, almost musical tone of moderate intensity, whereas the slightest pulmonary infiltration tends to make the note less musical, shorter and louder. There is considerable difference in the note produced over the normal lung during extreme inspiration and expiration, the latter being somewhat lower in pitch. This difference is the less marked the greater the degree of infiltration.

The writer believes that his method not only will demonstrate the site of the lesion where auscultation and ordinary percussion fail, but that by means of the difference between the inspiratory and expiratory note it will demonstrate the extra-pulmonary nature of certain lesions such as muscular hypertrophies, fatty tissue, thoracic deformity and the like, where the usual methods of auscultation and percussion might lead to the diagnosis of pulmonary disturbance.

Premenstrual Fever in Tuberculosis.—KRANS (*Wien. med. Wochenschr.*, 1905, No. 13) calls attention to the observation that in tuberculous women there is very constantly a rise in temperature just before the onset of the menstrual period. He believes that this has a certain amount of diagnostic value. An examination of the lungs made during this period of elevation of temperature usually reveals an increase in the auscultatory signs, a phenomenon that suggests that following the injection of tuberculin.

Koplik's Spots in Measles.—H. BRUNING (*Deutsche med. Wochenschr.*, 1905, No. 10).—Since Koplik's first observation in 1896, the diagnostic value of the spots discovered by him has been much disputed. The writer, however, concludes as the result of the observation of a large number of cases of acute exanthems, that, properly observed, the spots are an absolutely pathognomonic sign of measles, being never missed in this disease and never found in any other.

Blood Pressure in Certain Neurosis.—HASCOVEC (*Wien. med. Wochenschr.*, 1905, Nos. 11-17).—Contrary to the results of Strauss, Hascovec concludes on the basis of very numerous observations that a high blood pressure is of no diagnostic value in the various neuroses, especially those of traumatic origin. In eleven of his cases, all of them neurasthenic men, he found the blood pressure subnormal. A diagnostic value can be ascribed to such measurements only if it is known what the blood pressure of the individual was before the attack or the accident.

In epilepsy and paresis, he usually found atony of the vessels showing itself in a reduced blood pressure. In Graves' disease there was a high blood pressure that diminished with the disappearance of the exophthalmus.

Pleuritic Effusions in the Aged.—COURTOIS-SUFFIT and BEAUFUME (*Gaz. d. hop.*, 1905, No. 43).—Old people rarely present the typical physical signs of pleuritic effusion. A dullness on percussion over the lower portion of the lung usually indicates an effusion, even if the auscultatory observations fail to confirm the diagnosis.

A New Test of Diabetic Urine.—C. STRYZOWSKI; RABOW (*Therap. Monatsh.*, 1905, No. 2).—If one part of formal (40 per cent. solution of formaldehyde) be added to twenty parts of diabetic urine, a greenish fluorescent color appears on standing twenty-four to forty-eight hours in a certain number of cases. This reaction varies in intensity according to the amount of abnormal metabolic products (aceton, oxybutyric acid, acetacetic acid, etc.) present. Numerous observations have led Strzyzowski to the conclusion that the absence of this reaction indicates a mild form, its presence a severe form of diabetes. The reaction is not due to any of the above-mentioned pathologic products, but to some substance as yet unknown.

Rabow reports two cases in which he made use of Strzyzowski's reaction. In the first, a mild case, the reaction was negative; in the second, a grave one ending in coma, the reaction was strongly positive.

Significance of Pain in the Left Half of the Epigastrium.—RIEDEL (*Muench. med. Wochenschr.*, 1905, No. 17).—According to Riedel's experience, left-sided gastric pain speaks for an ulcerative process in the middle portion of the stomach. He reports twenty-eight cases of this sort, in which the diagnosis was confirmed by operation. Pain referred to this portion of the abdomen is practically never reflex from a disturbance elsewhere.

THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

The Influence of Urotropin on the Development of Scarlatinal Nephritis.—PREISICH (*Therap. d. Gegenwart*, 1905, No. 5, p. 211) has repeated the work of Widonity, using as his material 1,200 cases of scarlet fever admitted to the St. Ladislang Infectionsspital in Budapest. Half of this number (600) was given 1 to 7 grains of urotropin three times daily for the first three days after admission, and again for a similar period, beginning with the fourteenth day. The other half was not subjected to this treatment. In the first group (treated) nephritis developed in 9.16 per cent.; in the second group in 13.66 per cent., the latter presenting a much greater number of severe cases. The difference becomes more striking when the percentages of nephritis in each group are compared according to the day of illness (*i. e.*, scarlet fever) on which the administration of urotropin was begun. The percentages of nephritis in cases admitted on the second day of illness do not differ (9.8 per cent. in each group); on the third day 7.4 per cent. in the treated group; 13.6 per cent. in the untreated group; on the fourth day 10 per cent. as compared to 15 per cent.; on the fifth day 8.9 per cent. as compared to 25.6 per cent.; demonstrating that except in cases coming under efficient general treatment at the earliest moment, urotropin diminishes to a marked degree the effect on the kidneys of the scarlatinal toxæmia.

The Therapeutic Application of the Roentgen Rays in Addison's Disease.—GOLUBININ (*Therap. d. Gegenwart*, 1905, No. 5, p. 203) reports a case of Addison's disease, the probable tuberculous basis of which he assumes to have proven by successive, careful tuberculin injections. On the further assumption that unless caseation has occurred such granuloma may undergo atrophy when exposed to the x-ray; he subjected the patient to twenty-five x-ray treatments, distributed over thirty-five days. Both kidney regions were exposed from the direction of the anterior surface of the body for periods of three to eight minutes each, the tube being placed 25 cm. from the anterior abdominal wall. An immediate improvement was seen in the patient; he gained in strength and weight, the heart sounds became strong, digestion increased markedly, and the pigmentation of the hands and face diminished. A subsequent course of twenty-five exposures resulted in such marked improvement that the patient was able to return to his professional duties—those of an army officer.

The Treatment of Spastic Constipation.—ALBU (*Therap. d. Gegenwart*, 1905, No. 5., p. 204) distinguishes two forms of chronic constipation—the first, and by far the most common, due to atony of the intestine; the second, much less frequent in occurrence, due to a spastic contraction of the muscular wall of the intestines, developing in neurotic individuals on the basis of a previous atonic constipation. It is the latter which Albu discusses. He considers it in many instances analogous in character to the globus hystericus, spasm of the cardia of the stomach or of the pylorus. The spasm of the muscularis of the intestine or of parts of it develops at varying intervals for periods extending from hours to days or weeks. The spasm may be felt as abdominal discomfort, varying from mere uneasiness to severe colic. Objectively, the contracted band of the ascending or the descending colon can be felt, and when the rectum or sphincter ani is involved, the introduction of the finger meets with great resistance and causes great pain. Associated with this spasm may be some degree of enteroptosis, particularly involving the colon, and also a mucous colitis.

In treatment of the condition any measure which may act as a stimulant or irritant to the intestinal muscularis should be avoided, especially massage and laxatives. All therapeutic efforts should be directed toward allaying the irritable condition in which the muscular coat of the bowel is. To this end the following measures are outlined:

1. Warm or hot baths, either full or sitz baths, lasting ten to fifteen minutes, at a temperature of 30–35° R.

2. Hot applications to the abdomen, which may be either dry or moist.

3. Warm oil enemas of linseed, sesame or castor oil, in quantities of eight ounces, given every night as a high enema.

4. As a medicinal sedative in combatting the painful muscular contractions, atropin has proved of great value.

5. The diet should consist largely of vegetables which have been carefully prepared and from which all coarse masses of cellulose, which are likely to become irritant, such as hulls, skins, fibres, have been removed. Such diet may include all forms of wheat bread made of fine flour, vegetables which can be prepared as purees, soups, gruels, milk, and cooked fruits. Alcoholic beverages, condiments, cabbage, cucumbers, lettuce, radishes and cheese should be rigidly excluded.

6. Local treatment: A hard-rubber or metal bougie may be introduced into the rectum for a distance of 5 to 10 c.m., and allowed to remain for ten to fifteen minutes each day. This is of especial value in spasm of the sphincter ani.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

Investigations About the Etiology of Smallpox, Foot and Mouth Disease, Scarlatina and Syphilis.—JOHN SIEGEL (*Abhandl. K. preuss. Akad. d. Wiss.*, 1905).

Investigations About the Nature of the Vaccinia Microbe.—S. PROWAZECK (*Deutsch. Med. Woch.*, 1905, No. 19).

Finding of Spirochaetes in the Lymphatics of Syphilitics.—FR. SCHAUDINN and E. HOFFMANN (*Deutsch. Med. Woch.*, 1905, No. 18).

Appearing nearly simultaneously these papers have a bewildering and startling effect through the remarkable heterogeneity of the results obtained in the attempt to elucidate etiologically so far obscure diseases. This heterogeneity is the more surprising, as all of the papers are imbued with the teaching and training given the authors by one and the same laboratory, that of Schaudinn. In this laboratory Siegel has for years studied protozoa to prepare himself for his work; Prowazek has been for years the assistant of the director, of Schaudinn himself. It would be impossible in a short review to give an idea of the contents of the papers and of the conclusions the authors arrive at. While Prowazek restricts himself mainly to very ingenious investigations and experiments as to the nature of the vaccine bodies, proving irrefutably that they cannot be the parasites nor that they can carry out in vaccine or smallpox lesions a cycle of development, as alleged by Councilman and Calkins, he suggests their cellular origin on the basis of the modern teachings of cytology on certain cellular constituents present in normal cells and affected in the intoxicated cell with the result that the peculiar vaccine bodies arise from them. His belief seems to be that the real vaccine microbes are ultra-microscopic.

Schaudinn reports shortly and with great restriction his observations on the presence of a spirochaete in syphilitic lesions without directly connecting them with the etiology of the disease, although suggesting that they might be to be considered in this direction. This work receives a great deal of weight, if we remember that Schaudinn was the first to show that spirochaete is not a bacterium, but represents a stage in the development of a protozoic organism nearly related to the trypanosomas. These investigations throw a new light on the character and peculiarities of human and animal spirillum diseases so far not understandable from the bacterial point of view. Schaudinn's findings in syphilitic products have, since his publication, been confirmed by other observers. As to their meaning, for the present nothing definite can be said.

The paper published by Siegel is remarkable by the fact that he believes that he has unraveled in a comparatively short time the mysteries of four infectious diseases, the etiological factors of variola, foot and mouth disease, scarlatina and syphilis. In all of them he has found a minute organism, all of them belonging to the genus cytocyetes, a group that must be classified with the sporozoa and flagellates. They are found

not only in the specific lesions, but everywhere in the infected organisms in the form of minute motile bodies, provided with cilia and two nuclei. Their multiplication occurs by longitudinal fission or by multiple divisions, leading to the formation of larger masses, surrounded by a thick cytoplasmic envelope and called cystopores. The latter can again split up into sporozoites. On the whole, the organisms in the four diseases resemble each other closely, differing only in certain characteristics. So, for instance, in the foot and mouth disease the development of the parasite takes place within the nuclei of the afflicted cells, while in variola, scarlatina and syphilis it is cytoplasmic. The larger masses formed by the growth of the motile bodies represent the *guarnieri*, or vaccine bodies. So far we can only judge from the descriptions given by Siegel of his findings; the microphotographs given by him to illustrate them are too imperfect to allow of any conclusions. If we may go by the judgment of so authoritative a man as F. Eilhard Schulze (*Berl. Klin. W.*, 1905, No. 21), he had really to deal with ciliated, immensely motile organisms. On the other hand, so little is said about the avoidance of mistakes arising from degenerative processes in the infected cells that the suspicion is justified that here the explanation will be found. An absolute verdict can only be arrived at by a thorough and critical repetition of the work done by Siegel. Above all, our knowledge on degenerative changes in infected cells ought to be as complete as that of the developmental stages of protozoa. How, in this way, a fascinating and appealing construction like that of Councilman and Calkins of the life cycle of the cytocytes variolæ can be shattered has lately been shown by Ewing. We cannot suppress the fear that Siegel's assertions will soon meet with the same fate.

Contributions to the Histogenesis of the Nervous System.—OSCAR SCHULTZE (*Arch. f. Mikrosk. Anatomie*, Vol. 66, Heft 1).—This work, that by an original method establishes the multi-cellular genesis of the peripheral sensible nerve fibres and the presence of an universal end-network of sensible neuroblasts in the larvæ of amphibia, is a most important contribution in confirmation of the modern views held on the structure of the nervous system. It ranks equal with the beautiful study published by Prentiss on the nerve cell fibre network in the palate of the frog. It affects determiningly the hotly-discussed problem, whether Waldeyer's neuron theory can be accepted; it affects, too, pathologic problems, as to a certain degree it must lead to a modification, at least, of Waller's law of degeneration. Here only the general conclusions at which Schultze arrives can be given.

He has shown that the embryonal, nucleated, sensible fibre is nothing else but a multitude of cells or a syncytium arisen from a number of neuroblasts. This syncytium is not produced by a secondary union of the cells, but by continuous preservation of intercellular connections after the mitotic divisions. The morphologic continuity of the elements of the nervous system is primary, innate. These neuroblasts are the myelin-forming elements. There are no Schwann cells that peripherally attach to the fibres. As far as the peripheral neuroblasts become nerve fibres, the nucleus is pushed to the periphery, to the inner surface of the cell membrane, the neurilemma. The question, whether the

so-called units or elements of the nervous system are in continuous connection with each other—or, in other words, form nerve-cell networks—is answered in the confirmative by the author's demonstration of such a network for the integument of the body. Besides this, networks have been described for various other regions and organs of the evertbrate and vertebrate body. The neuron theory cannot be reconciled with this syncytial structure of the peripheral fibres, much less with the presence of neuroblast (and nerve-cell) networks. No unobjectionable evidence exists for the outgrowth of fibres from the center, while we have positive evidence that the nerve fibres are formed in loco by definite cells. Whether the neurofibrils or the intermediate substance represent the conductive substance we do not know, although the former assumption is very probable. Therefore, for the present, the emphasis laid on the neurofibrils or on the time of their appearance is of less importance. The main fact is that it is clear that neuroprotoplasm does not grow out and is not primarily discontinuous, but from the beginning represents a continuum, a syncytium, thus solving after a simple principle the problem of furnishing the governing apparatus for the multifold functions of the animal organism.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

Partial Contractions of the Uterus and Errors of Diagnosis Caused by Them.—PAUL BAR (*Bull. de la Soc. d' Ob. de Paris, rev.; Am. Jour. of Ob.*, May, 1905).—The writer calls attention to his observation that during the latter part of pregnancy segments of the uterus contract, while other portions remain relaxed, so that the contracted portions appear like tumors. This contraction may persist during a single gynecologic examination, while at the time of the next examination the apparent tumor will have disappeared. These same partial contractions may occur in the course of labor and then again simulate tumors. There may be difficulty in differentiating between such contracted portions of the uterus and pregnancy in one horn, extrauterine pregnancy, or a complicating myoma. Such contractions may be very painful. The author calls attention to the fact that in animals that have a bicornuate uterus, one side of the uterus contracts while the other remains relaxed.

[This phenomenon is well known and is mentioned, *e. g.*, in Ahlfeld's *Text-Book of Obstetrics*, published in 1898. In *Zeitsch. f. Geb. u. Gyn.*, vol. xlvii, 1902, Ahlfeld describes a most interesting observation of such an apparent myoma of the uterine wall during labor. This patient died and at the post mortem examination it could be positively ascertained that the uterine wall did not contain even the smallest tumor.—EDITOR.]

A New Method of Treatment of Condylomata Acuminata.—M. SCHEIN (*Wien. klin. Woch.*, No. 5, 1905).—The use of the thermocautery, of chemical caustics and the knife in the treatment of venereal warts entails numerous disadvantages, necessitates assistance, implies the danger of a hemorrhage and is always painful. The author's method seems free of these shortcomings. He produces necrosis by freezing. An ethyl-chloride spray is directed against the condylomata until they become anemic and white, the surrounding tissue being protected by gauze or cotton. The pain resulting from this procedure is very slight, if occurring at all. Within a few days the growth has become necrotic and falls off. Only in exceptional instances it is necessary to repeat the procedure twice or three times.

Are There Any Histologic Characteristics for a "Benign" Chorionepithelioma?—HOERMANN (*Zeitschr. f. Geb. u. Gyn.*, vol. liv, Heft 2).—In a resume of the gynecologic literature of the past year (January number of this journal) we had occasion to refer to the several attempts which have been made to find a histologic feature in chorionepithelioma which would enable us to differentiate between the benign and malign type of this new growth. We mentioned in this connection a paper of Velits, who claims to have found such a characteristic microscopic picture. Hoermann repudiates Velit's claim and considers this problem still unsolved.

Perforation of the Living Child in Maternity Hospitals.—R. KATZ (*Monatsch. f. Geb. u. Gyn.*, April, 1905).—This very interesting article is written as an answer to a paper recently published by Veit, in which he dogmatically states that the perforation of the living child never seems permissible. Veit claims that the necessity of such an operation is obviated if every case which may necessitate perforation of the fetus is sent to a hospital, in which a Cesarean section or symphysiotomy can be safely performed. The author takes exception with the views of Veit, and proves on the hand of 7,000 confinements that under certain conditions the perforation of the living child is absolutely unavoidable from a scientific point of view. The mortality of Cesarean section or symphysiotomy would be practically *nil* if performed only upon uninfected patients in a good general condition. But decidedly different are the results of these operations in cases which have been under the care of unclean midwives, if physicians made futile attempts of delivery with instruments, if the bladder or uterus are injured, and this is the case in a considerable percentage of the patients brought into a maternity hospital. An infected patient runs a smaller risk with a perforation of the child that probably has suffered from the effects of the protracted confinement and has only a small chance to live. There is a decided prejudice prevalent among the public against Cesarean section. Many patients absolutely refuse to submit to a laparotomy, but they must be delivered in some way. The author concludes that it is the duty of the physician to popularize Cesarean section, that it seems unavoidable to perforate even the living child under certain conditions, in the hope that at the time of the next confinement the patient will apply at the

hospital for help early enough to have the child's life saved either by means of artificial premature labor or a Cæsarian section.

Professional Tobacco Poisoning in its Relation to the Reproductive Functions.—PIERACCINI (*Clinica Moderna*, rev.; *Am. Jour. o. Ob.*, June, 1905).—Out of eighty-four pregnant women who were treated for manifestations of tobacco poisoning forty-nine were delivered at term, sixteen had premature labor, fifteen abortions, four were threatened with abortion; thus, almost 37 per cent. showed a premature interruption of pregnancy. All these women were well nourished and in comparatively good physical condition, so that the interference with the pregnancy could only be referred to the effect of the tobacco. In some cases the nicotine directly injured the fetus, causing its death and secondarily abortion. In other cases the nicotine seems to have affected the uterine muscles, producing premature contractions. The author concludes from his observations that the tobacco poisoning disturbs the course of pregnancy, but does not decrease the liability of impregnation.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

The Conformation of the Colon in the Nursling.—SAIAS (*Rev. Mens. des Mal. de l'Enf.*, May, 1905), in studying the question of constipation in nurslings made a number of autopsies in infants dying of diverse conditions to investigate the condition of the large bowel. The colon was not situated exactly alike in any two of the nineteen cases studied. The descending colon was found to be very long in all cases, and the number of flexions found in many cases offered an explanation of the constipation likely to be found in such cases. The author was not able to agree with the statement of Jacobi, that though the descending colon is very long in early infancy, the transverse and ascending portions of the large bowel are very short. He has found these parts of the bowel to be very long also.

The author sees a natural explanation of the constipation so commonly found in nurslings in this comparatively increased length of the colon with its numerous flexions. This mechanical cause is to be found in the colon as an entirety, not in the relatively increased length of its descending portion, and this mechanical cause is not found in the adult.

Treatment of Epidemic Cerebro-Spinal Meningitis.—HUBER (*Arch. of Ped.*, May, 1905), says that as yet our treatment is necessarily empirical and symptomatic. Against the fulminant cases, which form a large percentage of the whole number, we are absolutely powerless. The onset of the disease does not permit a forecast as to the ultimate course. The attack may be ushered in with very severe symptoms, which, in a

few fortunate instances, subside, and the subsequent course is mild with rapid convalescence.

The strength of the patient must be maintained by proper nourishment and skilled nursing. The room should be well ventilated, but darkened. The functions of the body are to be regulated. Plenty of water to drink and fluid diet are advised. The naso-pharynx should be irrigated with 6-10 per cent. salt solution freely. At times forced feeding through nose or mouth may be required.

Cold applications to the head are used as routine measures. The temperature can be reduced, when over 103, by means of colon irrigations at 80 or by mustard packs.

For the restlessness and suffering codein or morphia were given by the author in preference to the bromides, which did not give good results in his cases. Iodids were given as routine treatment. Applications of Crede's or mercurial ointment to the spine were not found to be of benefit. Intraspinal injections of lysol were tried in a few cases without apparent results. As a palliative measure lumbar puncture is often of value to relieve intracranial pressure. This procedure was done repeatedly in the same case.

Treatment with diphtheria antitoxin did not have any good results.

The author calls attention to the treatment advocated by Aufrecht and used with good results by Rogansky. Hot baths (104°) are given once or twice daily, an icebag being applied to the head.

The author concludes his paper as follows: "A careful consideration of the cause and a study of the pathologic lesions lead to the belief that, in future, preventive measures rather than remedial agents will overcome the dangers of the greatly dreaded epidemic cerebro-spinal meningitis."

Gonococcus Infections in Children.—HOLT (*Arch. of Ped.*, May, 1905), calls attention to the great frequency of gonococcus vaginitis in children's hospitals. Thus in 1904 fifty-two cases of specific vaginitis were found in the babies' hospital, but only sixteen of these could have been diagnosticated without bacteriologic examination. In well-marked cases the symptoms were fairly easy of recognition, discharge moderately abundant, yellow or greenish yellow, sometimes tinged with blood. Extension to the uterus, tubes and peritoneum was not observed; neither was cystitis met with. Urethritis was not common and seldom severe. In the milder cases the discharge might be so slight as to escape detection except by close inspection. Constitutional symptoms are few and insignificant and the temperature seldom rises over 101°. Arthritis is one of the most interesting phases of gonococcic infection in children. Holt reports twenty-six cases. Nineteen cases were in boys, seven in girls. A single joint was involved in only five cases, three or more joints were involved in sixteen cases. The superficial symptoms are a rapidly developing articular swelling with early redness, acute tenderness, and, in cases going on to suppuration, fluctuation at the end of a week. Not much edema in the neighborhood of the joints, but the usual characteristics of acute pyemic arthritis. Fourteen of the twenty-six children died, though the author thinks that in many of the cases the cause of death was marasmus and not pyemia. In children whose general con-

dition was good, early incision and washing out usually sufficed for rapid cure.

The author's general conclusions as to gonococccic vaginitis in young children are as follows: The milder forms are exceedingly annoying in institutions because of their intractability; the severe form being very dangerous on account of the liability of the children to gonococccic pyemia. Children with gonococccic vaginitis should not occupy the same wards or dormitories as other children. As a prophylactic measure all girls admitted to hospital should have the vaginal secretion microscopically examined. When the gonococcus is found with no discharge, or with a very slight discharge, children should also be quarantined, though it is impossible at present to say to what extent such cases may be dangerous in the ward.

Quarantine to be effective must extend to nurses and attendants as well as to children. Napkins, clothing, bedding, etc., of infected children must be washed separately from the rest of the house.

(Following the reading of this paper, a very full and interesting discussion took place, for the details of which the report in the JOURNAL as quoted may be consulted.—ED.)

Asthma in Childhood.—BARBARIN (*These de Paris*, 1904; *Arch. de Med. des Enf.*, April, 1905), says that true, essential asthma is found in children of all ages. Its onset is apt to be in the form of a severe bronchial catarrh, coming on in paroxysms, and suggesting a capillary bronchitis or bronchopneumonia. After twenty-four, forty-eight or seventy-two hours the attack subsides and the child appears perfectly well. Asthma is a manifestation, on the part of the respiratory tract of the neuro-arthritic diathesis. It is hereditary, coming directly from mother or father, though at times a generation may be skipped. The earlier it appears the better the chance of its amelioration or complete disappearance in time. When it appears in late childhood the prognosis is graver with regard to duration and complications (emphysema, cardiac dilatation and chronic bronchitis).

In addition to this essential asthma, there are various forms of symptomatic asthma, resulting from diverse affections of the nose, mouth, bronchial tubes, glands, digestive system, etc.

ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

Contribution to the Surgery of the Spinal Cord.—F. SELBERG (*The Beitr. z. Klin. Chir.*, Vol. XLIII, No. 1).—One of the four cases described was an extradural lipoma causing compression of the spinal cord, one was a tuberculous meningitis, another spondylitis, and another a sarcoma in the pia. The focus was freely exposed and excised and the patients with the lipoma and the tuberculous spondylitis were permanently cured. Every

progressive tumor in the spine should be operated upon, as the outcome is otherwise fatal, but the prospects of success are not always certain. Only a few tumors of the spine are capable of being radically removed. When the cord is involved the growth is inoperable. But when a lipoma, fibroma, psammoma echinococcus, or exostosis has developed and compresses but does not encroach upon the cord, success may be counted on. Mere diagnosis of the segment affords no information on this point. The first symptoms of a surgical spinal affection may be restricted to simple bladder disturbances. The pains are often taken to be sciatica or intercostal neuralgia.

The Gardener's Spade Deformity and the Silver Fork Deformity in Fractures of the Carpal End of the Radius.—JOHN D. ROBERTS, M. D., Philadelphia (*Medical Record*, May 27, 1905).—Much has been written in recent years about the pathology and treatment of fractures of the carpal end of the Radius. These lesions continue, nevertheless, to be badly treated by a great number of practitioners. It seems impossible to convince the profession that restitution of the normal concavity of the palmar surface of the lower portion of the radius is essential for comfortable convalescence and perfect cure. These injuries are fractures of all others, in which "setting" of the bone must be promptly and efficiently done. Force is required to disentangle the fragments, and the surgeon who fails to employ it does not reduce the fracture. The author describes the gardener's spade deformity as being very different from the silver fork deformity, and says that the planes of the forearm and hand are related to each other almost exactly as are the planes of the handle and blade of the gardener's spade. The difference between this gardener's spade deformity and the silver fork deformity lies chiefly in the fact that in the silver fork deformity we have fracture with forward displacement, whereas in the gardener's spade deformity the displacement is backward. For treatment reduction by force is advised. Either a straight splint on the dorsum of the forearm and hand or a molded splint on the palmar surface will thoroughly accomplish retention. As a rule the simpler the dressing is the better.

The Employment of the Blind for Massage.—NATHANIEL BOWDITCH POTTER (*Boston Med. and Surg. Journal*, April 27, 1905).—The object of this article is to stimulate interest in supplying the blind with another means of livelihood. In Japan for a great many centuries the custom has existed of employing blind masseurs. There the blind have enjoyed especial protection and indulgence from the Emperor. They have been exempt from taxation; they have formed a sort of guild. Practically all the massage employed in Japan is given by the blind. The blind are able to learn massage very readily when quite young. Although this universal custom of employing the blind for massage in Japan has long existed, comparatively few attempts have been made in other countries. Mrs. Z. I. Vengueroff began teaching massage to the blind in St. Petersburg in 1883. She selected a young girl who was born blind, who learned so quickly and became so adept that Mrs. Vengueroff was encouraged to continue her work with the blind. At the present time there are eleven pupils at her school, and she is apparently obtaining

very satisfactory results. In Sweden—the home, so to speak, of massage—less encouraging results are reported. Professor Nycander attempted to teach the blind or partly blind for about six years, but without much success. In Germany there have been several isolated attempts, none of which have produced striking results except the work done in Leipzig by Eggbrecht. He selected twenty-four persons, six women and eighteen men. Thirteen of these completed their course, four women and nine men. He transposed text-books such as are ordinarily used by nurses and masseurs into raised type. The skeletal parts were explained while the pupils felt the bones directly, and afterwards a living model. At the end of four months they became quite expert, and gave complete satisfaction to both physician and patient. The effect of massage upon the blind persons was excellent. They stood the exertion very well, gained in weight and strength, and developed a great interest in their work. In America we find that, in Boston, there are two blind women that have been successful in their efforts at massage. The author states that he was unable to find a suitable pupil at the blind asylum on Blackwell's Island, New York, but he soon after discovered a man thirty-five years of age, completely blind, who picked up enough in two months' instruction to be of great assistance in the charity wards of the city hospital. It is the author's hope that some time in the near future a scheme will be planned for providing suitable blind people with instruction in massage and for furnishing a practical organization so that they may obtain continuous employment, after they have learned, in the hospitals, dispensaries, sanatoria and homes of New York City.

The Treatment of Gonorrheal Arthritis by Hyperemia.—JOHANNAS H. M. A. VON TILLING, M. D., Poughkeepsie, New York (*Journal of the Amer. Med. Association*, April 29, 1905).—As is generally known, Bier recommended hyperemia by damming at first for tuberculous joint diseases; later he employed it for other diseases, and in his book (*"Hyperemias als Heilmittel"*) he writes:

"Yet much more marked is the effect of hyperemia by damming on the whole form of gonorrheal joint inflammation, which is so extremely painful. In these cases the pain becomes easier in from one-half to one hour after the application of the rubber bandage." During the last few months the author has had occasion to employ this form of treatment in three cases of gonorrheal arthritis which were marked by extreme pain and tendency to stiffness. He says that his results far surpass the results obtained by any other treatment, and most urgently recommends hyperemia by damming according to Bier. His technique was as follows: A pliant, thin rubber bandage, the same as is used to make limbs bloodless for an operation; this is applied in several layers, moderately tight around the limb. It will soon be noticed that the subcutaneous veins swell, the skin becomes of a red hue, slightly tinged with blue, and the limb becomes bigger and edematous. It feels warm to the touch. If there is pain in the joint, it ceases very soon, and the stiffness of the joint becomes gradually less. To prevent any unpleasant results, such as atrophy of the muscles or irritation of the skin at the place where the bandage is applied, a few layers of gauze can be interposed between the skin and the rubber. It is also expedient to change the place of the

bandage; for instance, he put it at night directly above the diseased joint, and during the day further away from the joint.

Location of Scoliotic Deviations at Various Ages.—ERNST MUELLER, Altdorf (*Zeit. f. Orth. Chir.*, Bd. 13, Hft. 4).—Schulthess compiles statistics based on 1,140 cases. These are tabulated each year from eight to eighteen. From this table we may glean the following facts: (1) The general frequency of the observed cases rises steadily from the eighth to the fourteenth year, and then diminishes. (2) Comparing the eighth to the seventeenth year, the frequency then of the maximum of the right convex deviation always shows itself at the sixth or the eighth dorsal vertebra. (3) The frequency maximum of the left convex deviation is at the eighth year at the eighth or the tenth dorsal vertebra; falls at the fifteenth year to the first or second lumbar vertebra, and remains there in the following years. (4) The frequency of the left convex diminishes, with few exceptions, from the eighth to the seventeenth year, but that of the right convex increases; at the fourteenth year they are equally divided. The number of compensatory curves increases steadily from the eighth to the seventeenth year. The increase depends chiefly upon the left convex compensatory curve.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

Physical Infection (Induced Insanity).—MEYER (*Berl. Klin. Woch.*, No. 22).—By this term is meant that the established psychosis of one individual is the specific cause of the insanity of a second. The clinical picture of the second must, therefore, conform to that of the first. A number of cases are described by the author to support the conclusions, which are as follows: Paranoia and paranoid psychoses are the forms of insanity which lead to induced psychosis. In the absence of any disposition to insanity it is difficult to understand how there can result a case of psychical contagion unless such a predisposition is assumed.

Dementia Præcox.—SACHS (*Journal Mental Nerv. Diseases*, June, 1905).—This paper was read before the American Neurological society to open the discussion upon dementia præcox. It is a statement of the conservative position held by many American neurologists. Sachs' conclusions are in part as follows: There are undoubtedly many cases which correspond accurately to the types described by Kraepelin and his followers. This is particularly true of the earlier forms of mental derangement occurring in members of a family in which there is a very marked psychic taint, but even in such individuals years may pass before appreciable dementia sets in. The term should be carefully restricted to such cases in which mental deterioration at an early stage of the disease is clearly recognizable, and should be carefully considered and possibly avoided

in those cases in which a dementia may possibly be developed in the far distant future.

Hyperplasia of the Chromophile Cells of the Hypophysis as the Cause of Acromegaly, with the Report of a Case.—LEWIS (*Bulletin of the Johns Hopkins Hospital*, May, 1905).—Of the forty-nine cases of autopsy findings in this disease collected by Furnivall in 1898 all but two showed abnormally large hypophyses. The following theories have been advanced to explain the symptoms found: 1. Nervous, the theory dependent upon changes in the central nervous system. 2. Theory of growth anomaly; atavistic theory. 3. Thymus theory. 4. Genital theory. 5. Thyroid theory. The most readily accepted theory is the one that is concerned with the changes found in the hypophysis which produce, in some way not clearly understood, an excessive function of the cellular elements of the anterior lobe of the hypophysis. The findings in this case seem to support this view. The hypophysis appeared normal upon gross examination, but microscopic examination revealed a hyperplasia, especially of the chromophile cells, which is confirmatory of the theory that acromegaly is caused by excessive function of the glandular elements of the anterior lobe of the hypophysis.

The Pathogenesis of the Tay-Sachs Amaurotic Family Idiocy.—SCHAFER (*Neurolog. Centralblatt*, No. 9, 10, 1905).—Sachs' amaurotic family idiocy, as the disease is known in this country, has always excited interest for the reason that it is apparently a well-defined clinical type, and because, as far as investigation has gone, there has been a uniformity of pathological findings in the post-mortem examination. The brief outlines of the clinical picture are as follows: 1. Beginning of symptoms in the first to second year of life, with a steadily progressive weakness mentally and physically. 2. The child is unable to fix accurately his vision; peculiar changes in the eye ground, which is pathogenic for this disease. 3. The child shows a steadily progressing dementia to imbecility. 4. Family type. 5. The frequent appearance of hyperakusis. This paper is based upon a material of seven cases, which in the literature of this disease must be considered a large clinical experience. Six of these were examined microscopically with various methods. It is worthy of note that the fibrilla stain was used in this study. The most definite fact derived from the pathological study was that the nerve cells of the whole nervous system were affected. The cell body was found to be the primary origin of the diseased process. The blood vessels showed normal conditions everywhere. In conclusion, the author believes that this disease might be included in the class of cases to which Edinger has given the name of "aufbrauch"—that is, fundamental incapacity to sustain for any length of time the normal functions. The Sachs amaurotic family disease is not a mixed form of this class of degenerative diseases, but is a classic example of a pure type.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

The Relation of Gonorrheal Rheumatism to Seminal Vesiculitis, and Its Cure by Seminal Vesiculotomy.—FULLER (*Ann. Surg.*, June, 1905).—The author is inclined to the view that gonorrheal rheumatism has for its cause the gonococcus only in a secondary manner; that the gonococcus, through the localized inflammatory reaction which arises from its presence in connection with the mucous membrane, allows other germs to enter the system, the result being the usual group of septic symptoms classed under the clinical heading, gonorrheal rheumatism. He even holds that gonorrheal rheumatism, so-called, can exist entirely independently of the gonococcus; that another agency can exist which can play the minor role assigned to the gonococcus of allowing other germs to enter the system from a genito-urinary source. He has observed on a considerable number of occasions all the clinical symptoms of gonorrheal rheumatism develop subsequent to surgical instrumentation or treatment which has awakened an acute inflammatory reaction in connection with old, quiescent lesions of the seminal vesicles. The idea occurred to him in December, 1904, to try to cure gonorrheal rheumatism by the operative method he is reporting. Since that time he has been of the opinion that the systemic infection in the male usually enters from a special focus, and that that special focus is represented by a seminal vesiculitis. Out of fifteen cases of gonorrheal rheumatism in the male investigated, in twelve the only existing genito-urinary lesion was in the seminal vesicles. Four of these were subjected to seminal vesiculotomy, all systemic absorption from the seminal vesiculitis being immediately checked and resolution of the genital lesion promptly following. Almost immediately in all these cases the active symptoms of gonorrheal rheumatism have wholly disappeared. At the end of two weeks, when the patients have been allowed out of bed—that being the usual period of rest demanded by the operation—they have all been able to walk about, and leave the hospital promptly, entirely free from their gonorrheal rheumatism.

The author has performed the operation of seminal vesiculotomy forty-six times without a death. He mentions a few cautions to be observed in doing the operation and tabulates his articles upon the subject.

Treatment of Acute Blennorrhagic Arthritis of the Knee by Intra-articular Injections of Sublimate.—GALLIARD (*Ann. des Mal. des Org. Urin.*, May 15, 1905).—Heretofore the treatment advocated for this condition has been immobilization, or arthrotomy followed by curettage and the application of iodine or zinc chloride. It is to avoid the arthrotomy that the author employs in acute suppurating arthritis of blennorrhagic origin, puncture followed by intra-articular injection of sublimate, or, better still, sublimate lavage. This procedure seems to the author in-

finitely superior to simple immobilization, and to puncture without consecutive injection. It is especially applicable to the knee. It relieves the pain even in those cases where great distention of the joint is rapidly produced after the lavage; it reduces the fever; it does away with prolonged immobilization and consequently irremediable adhesions. A sterilized solution of sublimate, 1 to 4,000, is employed. When the knee is painful and distended, it is punctured either with a capillary needle adapted to the syringe of Roux, which serves for aspiration, or with a needle less fine, which permits expression of the liquid without aspiration. Then, without awaiting complete evacuation of the purulent or sero-purulent fluid, 20 c.c. of the sublimate solution is injected and the mixture thus formed is extracted as completely as possible. This lavage is repeated several times at the same sitting, the liquid returning less and less thick; often it remains milky up to the end; it does not appear lymphoid even after five or six injections. The needle is now withdrawn and the wound covered with collodion. The knee is then enveloped in padding without compression. The limb is placed in a splint of padded iron wire, or upon pillows. In severe cases several sittings are necessary, never more than three. When the fluid appears absorbed, massage and movements of flexion and extension are begun, gently at first. No case of ankylosis has occurred in the author's results. The duration of treatment has varied from four weeks to four months. This treatment is recommended for acute blennorrhagic arthritis only, and not for cases of arthritis with streptococcus or staphylococcus infection. Local treatment of the gonorrhea must be also instituted. Ten cases in illustration are cited.

Intertesticular Anastomosis after Division of the Deferent Canal.—GIATTI (*Ann. des Mal. des Org. Urin.*, May 15, 1905).—From experimental operations, the author says that intertesticular anastomosis, that is to say, the grafting of a testicle with a divided deferent canal upon the other testicle with an intact deferent canal, with the aim of preserving the former testicle anatomically and functionally, and of creating new avenues for the escape of its sperm, is an operative act which determines a traumatism which may produce degenerative phenomena in both testicles, which are in proportion to the intensity of the operative traumatism. However, when this is very slight the degeneration is entirely wanting. In anastomosed testicles, immediate or remote division of the deferent canal, delicately isolated from the surrounding tissues, does not determine phenomena of degeneration.

The process of epithelial regeneration not only goes on in the body of the testicles, but even creates a tubular anastomosis between the glandular substances of the two testicles. This regeneration also includes the vascular and nervous tissues across the line of anastomosis, putting into direct communication the vascular and nervous tissues of the two testicles, thus making a satisfactory anastomosis. This anastomosis properly applied preserves not only the vitality of the glandular tissue of the testicle, but even its function as well, the spermatozoa being abundant and endowed with normal movements. The procedure is thus rational and experimentally proved.

The operation is indicated in cases of operative or traumatic injuries to the deferent canal of a healthy testicle.

Cystoscopy and Renal Lavage.—JOHNSON (*Med. Record*, May 20, 1905).—We find here considered the indications demanding cystoscopy and renal lavage; rules to be observed in preparing for cystoscopy; description for the *modus operandi*; difficulties likely to be encountered in the procedure, and cases illustrating the beneficial effects of his method of treatment.

Four cases are reported: One of lithemia with chronic catarrhal pyelonephritis, virtually cured; one subacute parenchymatous nephritis with catarrhal pyelitis and lithemia, much improved; one of chronic parenchymatous nephritis and chronic catarrhal cystitis, markedly improved, and one of chronic catarrhal pyelo-nephritis with stricture of the ureter, improved.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

Thymic Tracheostenosis.—CARTER (*Man. Eye, Ear and Throat Hosp. Rep.*, March, 1905), reports a fatal case. He uses the term advisedly, not referring to the condition caused by presence of an hypertrophied thymus gland upon the trachea (from an enlargement of the gland downward) with death caused by interference with the circulation. The symptoms are those of an obstruction to the passage of air in and out of the lungs and usually result in asphyxiation, while in the latter death results very suddenly from syncope. Carter notes the seeming reciprocal relation between the thymus and the spleen; if the thymus is large, the spleen is rudimentary; if small, spleen is large. In order to appreciate the encroachment on the lumen of the tube a transverse section (post-mortem) through the organs *in situ* should be made, otherwise one is misled.

Report.—M. B., female, five weeks. Patient small, six pounds, illy nourished. Extreme dyspnea. Head thrown backwards and sideways in efforts to breathe. cyanosis marked. Inspiratory and expiratory stridor. Child's condition dated from time of birth, getting steadily worse. Deep retraction intercostal spaces, episternal and supraclavicular notches, and recession of the epigastrium at each inspiration.

Tracheotomy afforded temporary relief. Death thirty-six hours after operation. Post-mortem an enormously hypertrophied thymus was found, pressing the trachea back against the vertebral column.

Parosmia.—MUNGER (*Man. Eye, Ear and Throat Hosp. Rep.*, March, 1905), reports a peculiar case of this rather infrequent perversion. The etiology—hallucinations of the insane, cases due to brain tumor, injury, etc.—in Munger's case was apparently an arterio-sclerosis, which must have involved the olfactory lobe, affecting its nutrition primarily and its function secondarily.

The man, age fifty, had been a generous liver, now suffered from severe headaches and had for some time been overpowered with a per-

sistent odor of what he described as "heliotrope." The odor was delicious and ever present. All liquors, particularly aromatic ones, gave off this odor. Everything was "heliotrope" of odor, his axillary secretions, the emanations of passing women, violet water, etc. This lasted six months. His taste was unaltered.

Alarming Hemorrhage Following Tonsillotomy—Its Cause and Cure.—HARMON SMITH (Man. Eye, Ear and Throat Hosp. Rep., March, 1905).—Fatal hemorrhages appear to be few. Broca lost two cases. One, a male, twenty-five, another, a male, eight and one-half, who had an anomalous carotid. A number of American physicians have lost cases. Smith argues that if death can occur from tonsillotomy, it behooves those who are daily performing this operation to fortify themselves as much as possible against such a contingency. The special causes enumerated are:

- (1) Hemorrhagic diathesis or hemophilia.
- (2) Fibroid tonsils, where glandular substance is largely enmeshed with fibrous tissue, which prevents the arterioles from contracting when cut.
- (3) Age—occurring more in adults than in children.
- (4) Sex—more frequent in males than in females.
- (5) Acute inflammation, when tonsils are engorged with blood. Consensus of opinion discourages removal when this condition exists.
- (6) Anemia.
- (7) Malignancy.
- (8) Abnormalities (1) of distribution of ascending pharyngeal artery; (2) abnormally large tonsillar artery; (3) abnormal internal carotid; (4) large vessel in anterior pillar of fauces; (5) wound of large venous plexus, at lower and outer border of tonsil; (6) arteriosclerosis.

Exciting causes (1) traumatism; (2) local anesthesia combined with an astringent, as cocaine and adrenalin, which predisposes to a secondary hemorrhage.

What do, especially if removed from office or clinical operating room?

Delavan and others recommend upright position. This induces syncope and the hemorrhage will stop. Yet in six cases this has been known to fail. The cautery is not usually at hand and has, moreover, limitations.

The purse string suture sounds easy, but is impracticable in a small throat.

Ligation of the carotid is a serious proceeding and not absolutely reliable.

Veratrum, iron and many other drugs are used in different ways, but all fail where the blood is flowing freely enough to be dangerous. In Smith's hands the most effective instrument has been the tonsillar hemostat of Mickulicz-Stoerek.

This instrument has been applied by Smith in three cases which are related. A table of cases of alarming hemorrhages reported since 1868 is also given. There have been fifty-four cases and six deaths reported.

Local Anesthesia of the External Ear Passages.—LAVAL (*Archiv. fuer Ohrenheilkunde*, April 27, 1905).—On account of the peculiar anatomy

of this part, the application of the Seileisch method or ethyl-chloride, or the use of cocaine solution, is difficult. Dr. Laval uses a one per cent. solution of cocaine muriate in normal salt solution, and anesthetizes the sensory nerves (a branch of auriculo-temporal, a branch of the vagus, and a branch of the auricularis magnus) before their distribution.

In locating these nerves there is danger of injuring the temporal artery, auriculo-temporal nerve, capsule of temporo maxillary joint and parotid gland. If mouth be opened wide, the first two organs named sink, the capsule of joint is stretched, and the parotid gland is pushed forward.

Now insert needle one and one-half c.m. deep, one half c.m. in front of tragus, and on level of floor of auditory canal—this for branch of auriculo-temporal nerve. Then, for the other two, pull the ear (external) gently forward, insert needle one c.m. deep on the level of the canal between bone and cartilage.

One-half cc.m. of the one per cent. solution is enough. The anesthesia begins in five minutes, and lasts about twenty minutes. This anesthesia can be used in operating for furunculosis, polyps, small tumors, paracentesis and abscesses, and may be used as an aid in diagnosis.

A Case of Otitis Media Purulenta, Secondary to an Empyema of the Antrum of Highmore.—KONIETZKO and HEMER (*Archiv. für Ohrenheilkunde*, April 27, 1905) relate a case in which an involvement of the ear was not suspected until post-mortem discoloration of the meninges in the temporal region was observed. The woman had died of general sepsis. It was learned that the patient, an elderly woman, decrepit and in a miserable physical condition, spoke in "nasal tone" and had a perforation of the hard palate, partly healed. Nothing in the nasal cavity was suggestive save the redness of the mucous membrane; no pus evident. She suffered from polyarthritis deformans. The temperature for three days before exitus was 39°, but sank to between 37.4° and 37.7°. The post-mortem pointed to an involvement of the middle ear, and a dissection of the temporal bone was made. Pus was found, after incising the dura, between the temporal and the basilar portion of the occipital bone. The left half of the sphenoid and a part of the basilar portion of the occipital bone were chiseled out, and the left pterygo-palatine fossa and the pharynx freely opened. Under these bones discolored necrosed tissue was found, which was easily removed with small forceps. The now visible upper posterior wall of the superior maxilla showed a carious perforation as large as a penny. This was enlarged, and the antrum of Highmore easily seen—in part greenish-black, in part green-gold in appearance, and full of mucus and pus. There was no perforation of the drum, and hence no otorrhea.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

MARTIN F. ENGMAN, M. D.

Acrodermatitis Chronica Atrophicans.—CARL HERXHEIMER (*Journal Cutaneous Dis.*, June, 1905).—As to the question which has been raised whether acrodermatitis chronica atrophicans is an independent affection or should be considered identical with scleroderma, the author believes that they are two separate affections and such a confounding is only possible in the atrophic stage as might also be possible with senile atrophy. In the inflammatory stage the differential diagnosis offers no difficulty. Scleroderma also begins often with hypertrophy, yet this is very different from that of acrodermatitis, scleroderma not usually showing glandular inflammation. Sclerodermic skin is hard and board-like and is always bound down to the lower tissues, whereas in acrodermatitis the skin feels soft and is never bound down. Scleroderma can affect any part of the integument, whereas acrodermatitis usually affects the extensor sides of the ends of the extremities and usually extends over the ends of the extremities.

Histological Researches and Some Reducing Agents Employed in Dermatology.—VIGNOLO-LUTATI (*Monatsch. f. Prakt. Derm.*, t. 38, p. 257).—These researches were carried on by the application of various reducing agents applied to the comb of the cock. It was found that the action of tar was solely superficial and affected the cells of the epidermis with which it came in contact, secondarily affecting the derma, and seemed to have a resolutive action upon chronic inflammation. The oil of cade produced likewise a moderate infiltration of cells in the connective tissue. Ichthyol provoked a moderate reaction of the derma.

Statistics on Radiotherapy.—MM. BISSERIE and MEZERETTE (*Annals Derm. and Syphilis*, April, 1905).—Since 1900, when the writers commenced the application of the x-rays in the treatment of certain cutaneous affections they have given their results in several communications, their figures being very encouraging, placing, in their opinion, radiotherapy upon a firm basis in the treatment of many grades of infections (mycosis, sarcoma cutis, etc.). The results given in this article are as follows:

Phagus.—Two cures out of eight cases treated.

Sycosis.—Twenty-three cases treated; twelve cures; eleven under treatment. The results in this affection are rapid, many of these cases being rebellious and chronic, and six to eighteen treatments were given.

Folliculitis.—Twelve cases treated; eight cures; four under treatment. The results rapid and very definite.

Acne.—Ten cases treated; four cures; six relapses. In this affection the immediate results are very marked and rapid, but in the majority of cases the cure was only temporary.

Nevus Planus.—Four cases treated; two improved; two under treatment.

Keloid.—Twenty-five cases treated; fourteen cures; eleven under treatment. The results are generally good. The applications must be made rather intensified.

Neuro-Dermatitis.—Twenty-seven cases treated; twenty-four cures and three under treatment. The changes for the better under this form of treatment in dermato-neuroses are very rapid, the first application often markedly improving them. Three to five applications have proved entirely beneficial.

Lichen Simplex, Lichen Ruba, Lichen Planus, Lichen Corne.—Twenty-four cases treated; seventeen cures and seven under treatment. The results are very rapid. After one or two treatments the itching disappears and five to six applications often completes the cure.

Verruca Planus.—Twenty-five cases treated; seventeen cures; four unsuccessful; four under treatment. In general, disappearance was produced after two or three applications.

Psoriasis.—Twenty-four cases treated; twenty-two cures; two under treatment; twelve relapsed. The immediate results are beautiful and rapid. The plaques are rapidly whitened, but the results obtained are not durable.

Lupus Vulgaris.—Forty-six cases treated; twenty-nine cured; four improved; seven unsuccessful and six under treatment.

Fixed Lupus Erythematosus.—Thirty-three cases treated; twenty cured; eight improved; two unsuccessful; three under treatment.

Epithelioma Cutis.—One hundred and eighty-six cases treated; one hundred and forty-two cures; forty-one improving; three unsuccessful (relapsed).

Sarcoma Cutis Diffuse.—Eight cases treated; six cured; two improving.

Cutaneous Melanosarcoma.—Twelve cases treated; ten cured and two improving.

Mycosis Fungoides.—Nine cases treated; six cured and three improving.

Paget's Disease.—Nine cases treated; six cured; three under treatment.

Epithelioma of the Upper Lip.—Eleven cases treated; eight cured; three unsuccessful.

Epithelioma of the Lower Lip.—Thirteen cases treated; six cured; five unsuccessful; two under treatment.

Epithelioma of the Tongue.—Seventeen cases treated; three cured; two improving; one relapsed after six months; eleven unsuccessful.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

Aristol Oil.—DAXENBERGER (*Woch. f. Ther. u. Hyg. des Auges*, vii, 10).—A 10 per cent. solution in oil of sesamum has been found by Daxenberger to be a non-irritating and mild ocular antiseptic. It has been found particularly useful in (1) inflammatory lid affections, e. g. as an application to the lid margins after the removal of the crusts of marginal blepharitis. (2) In lime burns of the cornea and conjunctiva. (3) In phlyctenular keratitis and strumous ophthalmia generally. (4) In traumatic abrasion of the superficial layers of the cornea.

A New Series of Semaphore Charts for Testing the Vision of Railroad Employes.—N. M. BLACK (*Am. Jour. Ophthalm.*; Feb. 1905).—These well executed charts of Black are of two kinds. The one depicts a standard semaphore pole surmounted by single and double blades in various positions and combinations. The ends of the blades are variously shaped—square, forked, pointed and rounded—to meet particular indications. The arm of the charted semaphore subtends an angle of five minutes at twenty feet. The other depicts a disk signal printed with the colors actually in use with this signal. The color of the disk exposed gives the indication. The figures are printed on a neutral grayish card which corresponds to the average tint of the horizon.

Dr. Black affirms that railway employes should not be required to name the colors as such, but should simply state whether the indication is "danger, caution or clear."

Latent Hypermetropia, the cause of the Difficulties Attending Refraction Work.—L. S. DIXON (*Ann. of Ophthalm.*, April, 1905).—Dixon avers that to uncorrected latent hypermetropia should be ascribed the majority of the oculist's failures to achieve wholly satisfactory results in refractive work. He has found that the ciliary muscle will frequently resist all efforts completely to paralyze it even with the aid of strong solutions of atropia.

Normal eyes can work hard without strain because when looking at a distance the ciliary muscle can completely relax. Abnormal eyes are constantly at work; they are without rest even when looking off at a distance, are, indeed, without rest while the eyes are open. If the ciliary muscle were actually at rest examinations by different observers at different times should give identical results. But this is rarely the case. "In the larger proportion of eyes, owing to their congenital peculiarities of shape there is formed by education and of necessity a habit involving the constant action while the eyes are open of the ciliary muscle. This habit being independent of the will must tend to conceal a portion of the error causing it from the usual methods of examination. And this uncorrected and undiscovered portion vitiates the results of our efforts to give the relief that results from rest."

"In practical tests fifty refusals to see through a glass prove nothing, one moment's acceptance does."

Dixon assures us that only after years of persistent effort will some ciliary muscles yield to the inevitable and disclose all the hypermetropia of the eye.

Keratitis Disciformis, With the Report of a Case.—W. C. POSEY (*Ophthalm. Review*, May, 1905)—Greyish white irregularly oval opacities sharply marked off from the surrounding clear corneal tissue occupied the center of each cornea in an elderly male. Under magnification the overlying epithelium was found roughened but unbroken, and the opacities were seen to be made up of small greyish dots.

Fuchs was the first to distinguish carefully between the so-called keratitis annularis of Vossius and keratitis disciformis. The latter disease is characterized by sharply delimited disc-like corneal opacities, the overlying epithelium being dull and insensitive, and at times roughened by small vesicular thickenings. Exceptionally the epithelium breaks down into small ulcers. The disease is chronic, lasting from six weeks to three or four months, and terminates in dense corneal opacities. Iritis, descemetitis and hypopyon are occasional complications. The disease is one of middle life, and has been observed sequential to a loss of corneal epithelium through trauma or herpes. Fuchs regards the affection as exogenic in origin and classifies it with the flat ulcer of herpes and *ulcus serpens*. Von Hippel, on the contrary, believes that the affection arises from the endothelial cells lining the anterior chamber. Peters insists on the connection between keratitis disciformis, corneal erosions and *ulcus serpens*, and believes all three to be dependent on a nervous lesion affecting the corneal epithelium. Therapy is unavailing.

The Danger of Using Adrenalin Too Freely in Glaucoma.—A. SENN (*Woch. f. Ther. u. Hyg. des Auges.*, Vol. xvii.)—In view of the fact that adrenalin has recently been warmly recommended by certain authors, especially by Grandelement as a valuable therapeutic adjuvant in glaucoma, it is interesting to view the obverse of the medal presented by the experience of Senn. This author relates a case of subacute glaucoma (plus tension, cupping of the disk, steamy cornea and medium dilatation of the pupil) which had improved notably under eserine instillations. On the withdrawal of the eserine drops the glaucomatous symptoms recurred. Five days later the patient consulted Senn, who instilled one drop of a 1-1000 adrenal in solution and one drop of a 1 per cent. eserine solution. Fifteen minutes later the patient was found to be suffering intense pain, the eye was "dead white," the cornea very dim, the pupil dilated *ad maximum*, and vision was reduced to hand movements. Energetic treatment with eserine and morphin hypodermically restored the eye to the condition obtaining before the use of adrenalin.

In a case of glaucoma absolutum two drops of adrenalin produced maximum dilatation of the pupil, stony hardness of the globe and unbearable pain necessitating enucleation.

BOOK REVIEWS.

MALFORMATIONS OF THE GENITAL ORGANS OF WOMEN. By CH. DEBIERRE, Professor of Anatomy in the Medical Faculty at Lille. Translated by J. HENRY C. SIMES, M. D., Philadelphia. With 85 illustrations. Philadelphia: P. Blakiston's Son & Co. 1905. Price, \$1.50.

This is a rather poor translation of a distinctly antiquated essay. We wish to take exception to the translator's introductory remark, that this work will fill a void in English medical literature. All that it contains can be found in practically every American textbook of obstetrics or gynecology, and certainly in a more up-to-date form. We do not know when the French original appeared, but, after a very careful perusal of this English translation, published in 1905, we made the very disappointing discovery that the literature of the last fourteen years has not been considered. There is a case quoted as "recently" reported which was published in 1882. On page 76 the writer mentions an instance in which varicose veins were mistaken for a femoral hernia. This case was published in 1842. We are, therefore, not surprised that the writer still believes that certain cases of epilepsy and insanity require castration, or (on page 54) that the extra-fetal portion of the allantois forms the fetal placenta. The author (or translator) does not see fit to make a difference between atrophy and hypoplasia.

We make the translator responsible for unintelligible statements as follows (page 18): divides the pelvis into two compartments which have been compared to the wings of a bat. Page 27: vagina has an angle of fifteen degrees. Page 28: cul-de-sac which exaggerates coition. Page 40: pelvis is strongly curved. Page 48: clitoris and labia minora are the fundamental organs of copulation. This latter sentence reminds us of the fact that the writer (or translator), with a most remarkable persistence, speaks of the right or left *labium majorum* or *minorum*. With the same carelessness (on page 15) he gives the length of the uterus three times (!) in cubic centimeters. On page 37 he even speaks of the *right vena cava*.

But this little volume offers still one more characteristic feature which needs mention. It quotes the histories of cases in a distinctly filthy form. There is hardly any excuse for giving the history of a case in the manner in which this is done on page 146; and if the author illustrates the congenital absence of the vagina with quotations from the memoirs of Casanova (page 110), he displays, to say the least, lack of judgment, because he could have quoted these same cases in another chapter dealing with atresia of the hymen.

We would advise the publishers to take this volume from the market. Its contents, the carelessness of its translation, and the many typographical errors place it distinctly below the standard of the average Blakiston book.

CONSERVATIVE GYNECOLOGY AND ELECTRO-THERAPEUTICS. A Practical Treatise on the Diseases of Women and Their Treatment by Electricity. By G. BETTON MASSEY, M. D. Fourth edition, revised, rewritten and greatly enlarged. Illustrated with twelve (12) original full-page chromo-lithographic plates; twelve (12) full-page half-tone plates of photographs taken from nature, and 157 half-tone and photo-engravings in the text. Pages xvi-468. Royal octavo. Extra cloth. Beveled edges. Price, \$4.00 net. F. A. Davis Company, Publishers, Philadelphia.

The author of this volume is well known as an enthusiastic believer in the efficacy of electricity in the treatment of every and all gynecologic troubles. His enthusiasm undoubtedly carries him too far. That there are merits in electricity as a therapeutic agent is a proven fact, but an exaggerated proclamation of them (as *e. g.* in this book) is not likely to gain new friends of this form of therapeutics. There is much truth in what the writer says against indiscriminate use of douches and tampons, those much

avored gynecologic applications, and it certainly must be admitted that an electric current crossing the pelvis offers at least as good a chance to exert a beneficial effect upon a tender ovary as a glycerine tampon in the vagina or ichthyol salve on the abdomen. Electricity is a most effective means of controlling hemorrhages from a myomatous uterus, but the method will never be used as generally as it deserves to be as long as its advocates at the same time will record innumerable cases of wonderful disappearance of large myomas under the electric treatment. Very exact observations of very reliable investigators have proved beyond doubt the fallacy of such claims. If electro-therapists proclaim electricity as the panacea of all ills of humanity, they do what the osteopaths did with massage.

Nevertheless, we recommend a careful perusal of this well written book to every gynecologist. It contains a considerable amount of good information. A non-operating gynecologist seems to be a better observer of small details which are of importance from the point of view of diagnosis. The author's description of uterine discharges, his classification of salpingitis, his views on the correlation between the disorders of the nervous system and genital organs and many other things in this volume are exceedingly good.

Part II of the volume, comprising 120 pages, contains a very clear and complete exposure of the general principles of medical electricity. The writer describes the various forms of currents, their production, the handling and characteristic effects of currents, and concludes with a chapter on Roentgen rays.

THE DISEASES OF SOCIETY. By G. FRANK LYDSTON, M. D. J. B. Lippincott Company, Philadelphia. 1904.

This book represents the effort of one who approaches the problems of vice and crime from the point of view of an interested observer and a sympathetic one, rather than from the point of view of one who collects and analyses in the light of what scientific knowledge we have the data at hand. For this reason alone the book takes on a peculiar color, due also in a measure to the fact that its author is a physician. Some of the titles of the chapters are, to say the least, somewhat startling. Chapter one is entitled "Social Pathology," five is "The Chemistry of Social Disease." The author's justification for the use of such terms is open to serious question, and if the reader approaches this book in a somewhat skeptical frame of mind, the author will find an explanation for it in his use of such ill considered terminology. It is questionable if the physician is the sort of man who can write best on the complicated question which this book treats of. Crime and vice have a broader basis than the purely physical one with which the physician usually comes in contact with. The economic factor plays its role also, and this factor cannot be treated in the rather free and easy manner used in this book. One of the chief objections to Lydston's book is the style. Such phrases as the "therapeutics of anarchy," "therapeutics of social disease," etc., make a too evident insistence on the fact that the author is a physician, and that his way of thinking is too often influenced by his office and hospital way of looking at things. One is much less interested in reading a book of this kind by what the author is than what he thinks. The force of what one has to say is merely weakened by dragging in by the throat, as it were, medical terms which have no special meaning apart from their legitimate use. The reader's patience is no little tried by constant repetition of this sort, and above everything a book should not produce a feeling of impatience on the part of the reader. The reviewer confesses to just this effect. On the other hand, there is much evidence in the work of a careful study of the subject and of an abundance of opportunity, in a popular sense, for observation. There are chapters which are striking in the freshness of view and in the common sense conclusion arrived at. Here and there are to be found opinions which should be given a wider publicity than is likely to be obtained in this book. The author's views in regard to expert testimony, and to the legal side of the criminal procedure, are absolutely sound. There are statements also which will not bear the closest examination, and the manner in which the author has settled some of the most mooted points in the psychology of hysteria and drug addiction, for example, is so much in the manner of the usual writer on this subject as to merit no more than a mere mention. On the whole, it might be said with justice that in many ways the book probably fails of its purpose, but in many others, probably unknown to its author and wholly unintended, it will prove effective. One regrets that so many good things should be hidden away in a mass of rather ill considered data presented in a way that is bound to carry less conviction than the author really deserves.

WHARTON & STILLE'S MEDICAL JURISPRUDENCE. Volume II. Fifth edition. Edited by ROBERT AMORY, A. M., M. D., and ROBERT L. EMERSON, A. B., M. D.

This most useful work has been brought up to date by the present editors, and is presented in a handsome volume of 858 pages. The classification of poisons has been changed to correspond with the progress of modern investigations; that is, they have been classified in accordance with their chemical and physical relations, rather than according to the character of the symptoms which they produce.

The part of the book which relates to the chemical investigations has, perhaps, been more thoroughly revised and rewritten than any other, and those processes for the detection of poisons which experience has shown to be most reliable have been given prominent positions. Important progress has also been made in this new edition in the description of physiological actions of poisons, and the latest literature on the subject has been freely consulted and used. Special attention has been given to some of the poisonous substances which are frequently now the cause of death, such as carbolic acid and wood alcohol, the latter part of the work having been contributed by Dr. F. M. Spalding. The metric system has been introduced as an alternative system throughout the work. Special reference has been made to the effect produced by small quantities of borax added to foods, based on the data contained in Bulletin 84, Part 1, of the Bureau of Chemistry of Washington, D. C.

A valuable addition to the book is also the law relating to the medical examiners of the States of Massachusetts and Connecticut. Physicians, pharmacists and chemists will find the fifth edition of this classical work especially useful, well arranged, and easy of consultation. In the space of a brief review particular attention cannot be called to the many valuable data which appear for the first time in a work of this kind. It may be said, however, that the addition of this new matter has not led the authors to neglect old and established data, although they have omitted from the pages of this new edition much of the nonessential matter of previous editions.

H. W. WILEY, M. D.

DE L'ENDOMETRITE ET DE LA METRITE PARENCHYMATEUSE INFECTIEUSES. Par Dr. E. OZENNE. Paris: A. MALOINE, Editeur. 1905.

This is a splendid monograph, which embodies in a very thorough manner our present knowledge of the various forms of endometritis and metritis. The practitioner will find much valuable advice for the local, and especially general treatment of these conditions.

GYNECOLOGICAL DIAGNOSIS. A Treatise on the Diagnosis of Diseases of Women. For Students and Practitioners. By PALMER FINDLEY, B. S., M. D., Assistant Professor of Obstetrics and Gynecology, Rush Medical College. In one octavo volume of 588 pages, illustrated with 222 engravings in the text and 59 plates in colors and monochrome. Cloth, \$4.75, net. Lee Brothers & Co., publishers, Philadelphia and New York. 1905.

The importance of the subject is evident, as correct diagnosis leads directly to successful treatment. Dr. Findley covers the subject fully and practically, and bearing in mind the needs of both students and practitioners explains the most modern views and methods simply and with careful details, using black and colored illustrations freely. The first edition of this work has already been exhausted, and the author has utilized the opportunity to revise the volume thoroughly, bringing it in every part well up to date. An addition of nearly 100 pages of text, 12 engravings and 14 colored plates has been necessary to present the important growth of the subject during the short interval since its first edition.

MATERNITAS. A Book Concerning the Care of the Prospective Mother and her Child. By CHARLES E. PADDOCK, M. D., Assistant Clinical

Professor of Obstetrics, Rush Medical College. (Chicago: Cloyd J. Head & Co. Price, \$1.25.

The purpose of this little volume is clearly stated in its title. Every practitioner has been asked by some of his patients just for a book of this kind. This volume can be safely placed in the hands of every expectant mother. It will explain to her many of those perplexing questions which present themselves at these times, but which she hardly considers necessary to discuss with her physician.

L'ŒUF HUMAIN ET LES PREMIERS STADES DE SON DEVELOPPEMENT, par J. POTOCKI. Professeur Agrégé à la Faculté de Paris, et A. BRANCA, Professor Agrégé à la Faculté de Médecine de Paris. Preface du Professeur A. PINARD. Prix. 10 francs. G. Steinheil, éditeur, Paris.

The two authors give us a book which is quite original in its conception. It is not a general embryology, but is exclusively devoted to a consideration of the first development of the human ovum. Before entering into the subject proper the writers offer a clear description of the sexual cells, both the ovum and the spermatozoid. They consider next the histology and function of the genital organs. The third part of the volume contains five chapters devoted to fecundation, segmentation of the fertilized ovum, the formation of the three germ layers and the primitive formation of the embryo. In the last part are considered the umbilical vesicle, amnion, chorion, allantois, umbilical cord and the process of implantation of the ovum with the formation of the placenta.

The subject is presented in a very exhaustive form. The authors give the results of their own investigations and quote extensively from literature. One hundred illustrations in the text and seven colored plates enhance considerably the value of this work which will prove of special interest to all those who want to familiarize themselves with the scientific aspects of obstetrics.

A MANUAL OF PRACTICAL HYGIENE FOR STUDENTS, PHYSICIANS AND MEDICAL OFFICERS. By CHARLES HARRINGTON, M. D. Third edition, 8vo., pp. 793, with 12 plates and 118 engravings. Lea Bros. & Co., Philadelphia and New York. 1905.

A new edition of Prof. Harrington's valuable work is sure of a welcome. Much new matter has been introduced, in particular a useful chapter on immunity from the hygienist's point of view. Few books on this subject better deserve a place on the physician's shelves.

ERKRANKUNGEN DES WURMFORTSATZES. VON DR. F. SCHILLING. Würzburger Abhandlungen aus dem Gesamtgebiet der Practischen Medizin, herausgegeben VON PROF. DR. JOH. MUELLER u. PROF. DR. OTTO SEIFERT. V Band. 2 u. 3 Heft. Würzburg. A. Stuber's Verlag (C. Kabitzsch). 1904.

A monograph of 43 pages, in which the anatomy, pathology, diagnosis and treatment of appendicitis is briefly discussed. The writer upholds the view of many German internists, that the proper treatment of early appendicitis is with rest and opium. Operation is advised:

1. Where there clearly is an abscess.
2. In the interval.
3. To close a fecal fistula.
4. To loosen old adhesions.

INTERSTATE MEDICAL JOURNAL.

VOL. XII.

AUGUST, 1905.

NO. 8.

ORIGINAL ARTICLES.

DIFFERENTIAL DIAGNOSIS OF ORGANIC HEMIPLEGIA AND HYSTERIC HEMIPLEGIA.*

DR. J. BABINSKI, Paris.†

Translated by CHARLES GILBERT CHADDOCK, M. D.

Gentlemen:—It would be superfluous to attempt to show from a practical standpoint that it is essential to be able to distinguish organic hemiplegia from that due to hysteria. None of you are ignorant of the fact that these two kinds of hemiplegia have a different prognosis and demand absolutely different treatment; and that a mistake in diagnosis under these circumstances may lead the physician to institute treatment very prejudicial to the welfare of his patient. Furthermore, it is not necessary to go into a long dissertation in order to prove that in many cases the differential diagnosis is difficult and even impossible, if, in order to form an opinion, one has at his disposal the classic differential signs; it has happened to every physician to see cases of this kind.

The characteristics which serve to distinguish the organic hemiplegia from hysteric hemiplegia may be divided into two categories: on the one hand, the intrinsic characteristics related to the anomalies of motility which occupy one side of the body; on the other hand the extrinsic characteristics which are related to the presence or absence of certain phenomena which are independent of the latter, to the circumstances in which the paralysis began, and to the nature of the soil upon which it developed.

The latter characteristics are those to which generally the greatest importance is attached. For example, here is an adult individual, never having manifested hysteria, stricken without immediate apparent cause with hemiplegia; he would be considered without further examination as suffering with organic hemiplegia by the majority of physicians. In general, a similar diagnosis would be made even in a young person attacked by hemiplegia, if the patient did not present the stigmata of hysteria, if he were syphilitic, or if he presented the signs of a cardiac affection, especially those of mitral stenosis; on the other

*Copyrighted by Charles Gilbert Chaddock, 1905.

†A lecture delivered at l'hôpital de la Pitié.

hand, let the young person be neither syphilitic nor subject to heart disease, and present the stigmata of hysteria—hemianæsthesia, sensori-sensorial—if he declares that the hemiplegia followed a lively emotion, there would be scarcely any hesitation in regarding the paralysis as due to hysteria.

Certainly I have no idea to take all the value from the extrinsic characteristics mentioned, and I am quite willing to admit that they may justify entertaining a very likely presumption, but it is my opinion that in no case are they capable of being made the basis of certainty, and I shall try, by analyzing them in succession, to prove to you the correctness of this opinion.

The role of emotion in the genesis of hysteric accidents is certainly very well established, but we should not on that account conclude that every case of hemiplegia attributed by the patient to mental shock is hysteric. Do we not know, in the first place, how frequently patients are inclined to attribute to this factor the disturbances to which they are subject? And we should guard against accepting without sufficient examination any declarations of this kind. Besides, and it is a point upon which I cannot insist too much, it is an incontestible fact that psychic shock may cause an organic lesion of the brain in an individual whose heart and cerebral arteries have been altered by disease; lack of appreciation of this fact has often caused errors in diagnosis. Recently I saw an instance of this kind, which my interne, Dr. Cestan, reported to the Anatomical Society.¹

It is well known that organic hemiplegia is more frequent in the advanced period of life than in youth, and that the contrary holds true of hysteric hemiplegia. However, this is but a rule and subject to many exceptions.

Heart disease, more especially stenosis, cerebral arteritis, and more especially syphilitic arteritis, are, it is true, the most common causes of focal lesions of the brain; but it should not be forgotten that a man may have an arterial lesion of the brain without presenting objective signs of it, and that consequently the absence of such signs does not permit the hypothesis of cerebral softening or hemorrhage to be cast aside; that on the other hand, as simple common sense teaches, an organic affection of the circulatory apparatus does not immunize against hysteria; a person though organically diseased, is still capable, like another, of being affected with hysteric hemiplegia.

Similar considerations are applicable to the presence or absence of hysteric stigmata, since these may be absolutely wanting in hysteric paralysis and hysteria does not preclude the presence of organic affections. We have only to recall that the association of hysteric and organic maladies is very frequent;² that, for example, hysteric hemianæsthesia easily develops in a person suffering with organic

hemiplegia. Thus, from the point of view of differential diagnosis, the insufficiency of the preceding characteristics is evident.

There are some other extrinsic characteristics which have a greater value. These are fever, fecal incontinence, acute decubitus occurring on the paralyzed side. Certainly the presence of such anomalies, particularly the last two, almost permit the affirmation that the hemiplegia depends upon an organic affection, but they are either transitory or they occur in grave cases rapidly terminating in death. Therefore, the physician observes them but rarely, and thus their presence is not often an aid in diagnosis.

From what has been said the inadequacy of extrinsic characteristics for differential diagnosis of these two kinds of hemiplegia is evident.

For a long time convinced of this fact, I have studied the intrinsic characteristics; I have tried to appreciate exactly the importance of those that had already been established, and in the course of my examinations I was led to observe certain new ones whose value I endeavored to establish; and I now believe myself authorized to maintain that in the great majority of cases the intrinsic characteristics offer decisive elements of differential diagnosis. The purpose of this lecture is to describe the intrinsic characteristics which appear to me to be the basis upon which must rest the differential diagnosis of these two kinds of hemiplegia.

Theoretically, at once we may foresee the various ways in which motility may be disturbed in hemiplegia, if we remember the various modes of normal muscular activity, muscular tonicity, voluntary contractility, and reflex contractility.

Tonicity maintains the various portions of the body in a fixed attitude of relation one to another, and it is easy to conceive that its enfeeblement or exaggeration brings about certain deformities.

When we analyze voluntary contractility in any more or less complicated movement, it is apparent that it is the result of two kinds of movements; some are conscious, others are unconscious or sub-conscious. Take, for example, the act (of which I shall have more to say later) of rising to the sitting posture from the horizontal position on the back. In this movement, flexion of the pelvis on the thighs and of the trunk on the pelvis constitutes the principal and conscious act; but for its normal accomplishment previous extension of the thighs on the pelvis is needed, a movement which is automatically executed and of which one is but little or not at all conscious. It may be supposed that in paralysis these two kinds of movements might be disturbed.

Finally, reflex contractions, which may be excited by tapping the tendons or irritating the cutaneous surface, as is immediately suggested, may in a paralyzed patient present two kinds of modifications; one depending upon the tendon reflexes, the other upon the cutaneous reflexes.

This theoretically considered, let us pass to the examination of the facts.

Let us begin with facial paralysis. I have no intention to present here a complete study of this syndrome; I shall limit myself to correcting certain classic dogmas which, in my opinion, are inexact, and I shall try to make clear the characteristics which enable us to distinguish the two kinds of facial involvement in the hemiplegias we have under consideration.

First, let us examine the facial paralysis that occurs in organic hemiplegia.

During the period of flaccidity in repose the face presents the following appearance: On the paralyzed side the labial commissure is lowered, the naso-labial line is erased, and during expiration the cheek is blown outward; when the domain of the superior facial is involved, which is not rare, especially in the beginning, before there has been any amelioration of the paralysis, the wrinkles of the brow are erased and the eyebrow is lowered. It is easy to demonstrate that these disturbances are due to enfeeblement of the normal muscle-tone; it is only necessary to take the lips and the cheek between our fingers and make passive movements in order to convince ourselves of the muscular relaxation.

In classic treatises the facial asynergy in repose and during the period of contracture is said to be the opposite of that which has just been described; on the paralyzed side the naso-labial line, after having been erased, is said to become more marked, and the labial commissure, after having been lowered, is said to be raised above the level of that of the healthy side. This description is true of a certain number of hemiplegics, but not of all—far from it. It is not infrequent in patients that have suffered with hemiplegia for several years, and whose limbs are in a state of contracture, to note a lowering of the commissure on the paralyzed side like that characteristic of the period of flaccidity.

The unilateral movements of the face are less readily executed on the side of the hemiplegia than on the normal side, as might naturally be expected. The same is true of bilateral movements, whether the hemiplegia be in the stage of flaccidity or in that of contracture. The predominating action of the muscles of the face on the sound side is especially apparent when the patient speaks; then it is immediately noted that the muscles of the lips functionate much more actively on this side; I have never seen the opposite condition. In the act of laughing we also note frequently that the labial commissure is raised, and that the naso-labial fold is accentuated on the normal side even in hemiplegics in whom, on the paralyzed side, in the state of repose, the labial commissure stands at a higher level than its fellow, and the naso-labial fold is more marked. I must add, however, that this is not always the case, and that sometimes smiling only accentuates the asymmetry due to contracture.

When the tongue is protruded from the mouth, ordinarily it deviates slightly toward the paralyzed side.

I wish now to draw your attention to these points: First, that the facial paralysis is limited to the hemiplegic side; and next, to the parallelism that exists between the various disturbances of voluntary motion. If, for example, the unilateral movements are very weak, the loss of power will also appear very clearly on the hemiplegic side when various bilateral synergic movements are executed. It is not necessary to add that this parallelism is not mathematical, since any one of the various disturbances may be more marked than the others.

I should also say that this paralysis is subject to rules, if not to laws; that is, contracture follows flaccid paralysis, and the disturbances of motion grow less and less marked, depending, of course, upon the patient, but always in a progressive manner; and they are not subject to alterations of increase and decrease.

I scarcely need add that in certain cases of hemiplegia the face is but slightly involved, and may appear to be absolutely normal.

As for the disturbances of motion which hysteria may engender in the domain of the muscles of the face, they are only phenomena of a spasmodic nature, the reality of which has been long and incontestably established.

Chareot gave a masterly description of glosso-labial hemispasm,³ and all observations since made have only served to confirm its accuracy.⁴

The existence of flaccid paralysis in hysteria was for a long time held to be doubtful, and Chareot, having energetically denied the possibility of it, finished by admitting that it might occur after the articles by Ballet⁵ and Chantemesse.⁶ Koenig has published an interesting work on this subject,⁷ and I have reported in two communications to the Medical Society⁸ certain facts which tend to show that hysteric facial paralysis has a clinical aspect quite distinctive which makes it possible to distinguish it from that which occurs as a part of organic hemiplegia.

In this species of facial paralysis (hysteric) we may see the lowering of the commissure like that seen in organic paralysis, but in contrast with what we see in organic paralysis, when the lip or cheek is seized by the fingers and passive movements are made, we note the absence of muscular relaxation and see that the lowering of the commissure is only apparent and due to raising of the opposite commissure spasmodically; or that it is the result of the contraction of the muscular fibres which lower the lip, and that, far from being the consequence of muscular flaccidity, it is a manifestation of muscular action. In hysteric facial paralysis we never observe lowering of the eyebrow or erasure of the lines of the brow, which occur in organic paralysis, dependent upon diminution or abolition of muscular tone. The absence of any disturbance of this mode of muscular activity gives to hysteric facial paralysis, as to hysteric paralyses in general, no matter what their location, a special

feature. This, at least, is the opinion I have expressed and which I maintain.

The tongue is sometimes deflected toward the side of the facial paralysis, and it may be but slightly, as in organic paralysis; but, contrary to what is observed in the latter, the deviation may be very pronounced, and under such circumstances it is very easy to show that the condition is one of spasm of the tongue. It may be in some cases that the deviation is toward the sound side.

The anomalies in hysteric paralysis are but rarely limited rigorously to one side of the face, as in organic paralysis.

In contrast with organic paralysis, hysteric facial paralysis is ordinarily a systematic palsy; that is, it affects one or several systems of voluntary movements which the muscles of the face execute. In one patient, for example, the two sides of the face functionate about equally in the act of speaking or whistling, while the unilateral movements are abolished on one side, and on this side the movement of elevation of the labial commissure is quite impossible.

Finally, the evolution of hysteric facial paralysis is capricious and not subject to rules like those which govern the development of organic paralysis. The spasmodic manifestations do not necessarily follow the paralytic phenomena; they may precede them and in many cases the two are associated. Moreover, the symptoms may be improved or become aggravated from time to time, and they may be noticeably modified in their intensity and their form, not only from day to day, but from one moment to another.

After this comparative study of these two varieties of facial paralysis, I wish to call your attention to a disturbance in the domain of the platysma myoides muscle which I described in a communication made to the Medical Society.² I observed this disturbance in organic hemiplegia, and it consists of this, that in certain cases in which this muscle is called into play its contraction is more energetic on the sound side than on the paralyzed side. This phenomenon is especially noticeable when the patient forcibly opens the mouth (*vide* Fig. 1), and when the head is bent forward in opposition to a movement of extension which the examiner makes; also when the patient whistles, blows or makes movements of swallowing. I hasten to add that not all hemiplegics present this sign. I have called this phenomenon *associated spasm of the platysma*, which, after reflection, seems to me to be erroneous; in fact, I believe there is no spasm on the normal side, but rather paralysis of the platysma on the affected side, which becomes apparent in the synergic movements of the two muscles and which manifests itself in predominance of the action of the muscle on the normal side. I propose to call this simply the *sign of the platysma*. It may also be present in peripheral facial paralysis, this muscle being in part innervated by the facial nerve. I have seen two patients affected with organic hemiplegia in whom the

fibres of the platysma were more apparent on the paralyzed side than on the sound side when the mouth was opened. Probably in these cases there was a real spasm; and, besides, in the same patients there existed on the side of the hemiplegia, lowering of the commissure which was manifestly of spasmodic origin. These cases seem to me to be exceptional.

In patients suffering with pure hysteric hemiplegia that I have examined with reference to this point, I have never observed this sign; how-

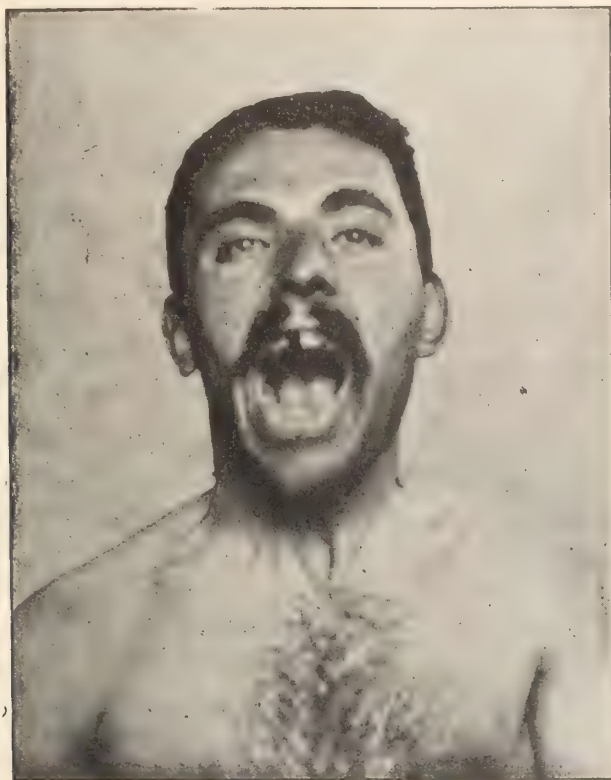


FIG. 1.—Left organic hemiplegia of one year's duration. Contraction of right platysma. Courtesy "Gazette des Hopitaux."

ever, since it is possible to voluntarily contract the platysma on one side, I can conceive that it might be found in hysteria, or, rather, simulated in hysteria. In any event, it seems to be very much rarer in hysteric hemiplegia than in organic hemiplegia, and without wishing to attach fundamental importance to it I think that when the sign of the platysma exists distinctly on the sound side in a case of hemiplegia, it is an index of organic lesion.

Let us pass on to the study of the disturbances of motility observed in the limbs and trunk which may help us to the end we seek.

I have already remarked that the lowering of the labial commissure and the erasure of the lines of the brow in the facial paralysis of organic hemiplegia were due to lowering of muscular tonicity. This anomaly in organic hemiplegia is not limited to the muscles of the face; it is simply more apparent there than elsewhere, because it brings about



FIG. 2.—Right organic hemiplegia on its fifth day; exaggerated flexion of the right forearm.
Courtesy "Gazette des Hopitaux."

facial asymmetry which at once attracts attention; but as I have elsewhere shown, it may likewise implicate the limbs.¹⁰

It shows itself in lowering of the shoulder, as well as in foot-drop and wrist-drop; when the legs are hanging down, the angle that the foot forms with the leg is greater on the paralyzed side; when the forearm is maintained in a horizontal position and in pronation, flexion of the hand at the wrist is more accentuated on the same side. Lowering of the tonicity of the muscles of the superior extremity may also be shown by the following manoeuvre: when, with the forearm in supination, it is

passively flexed on the arm and strong effort is made to bring the two segments of the member close together, as close as possible without causing pain, and using the same amount of force on each side, it will be noted on comparing the two sides that the degree of flexion is much greater on the paralyzed side (*vide* Fig. 2). This phenomena may be called *exaggerated flexion of the forearm*. I should remark that even in normal persons there may be found a slight difference between the two sides; usually in such cases the degree of flexion is more apparent on the weaker side—the left. This phenomenon, then, has value only if it is very decided; and it has greater significance in right hemiplegia than in left hemiplegia. It is usually observed in cases of recent flaccid hemiplegia without exaggeration or with enfeeblement of the tendon reflexes; but I have observed it also, and this may seem surprising, in some cases of old hemiplegia with exaggeration of the tendon reflexes.¹¹

Never having seen this sign in hysteric hemiplegia, I regard it as a help in differentiating the two kinds of hemiplegia with which we are concerned. I must add that exaggerated flexion of the forearm has significance only if the paralyzed member is free from amyotrophy; for the degree of flexion is always more marked on the side of the atrophied member, even when the atrophy depends upon an hysteric paralysis.

I now call your attention to a differential sign of these two varieties of hemiplegia, which I described two years ago, and to which I attach great value. It is found in the majority of patients affected with organic hemiplegia when the patient lies horizontally on a hard surface like the floor, with the arms crossed on the chest, and then makes an effort to rise to a sitting position. The thigh on the paralyzed side executes a movement of flexion on the pelvis and the heel leaves the floor slightly. On the opposite side the limb remains immobile or the flexion of the thigh and the elevation of the heel occur later and are very much less marked than on the side affected with paralysis (*vide* Fig. 3), at the same time the shoulder on the normal side is carried forward.

The movement I have described occurs, and may be even more accentuated when the patient, after having come to a sitting posture, always maintaining the arms crossed on the chest, allows the body to fall backward to a horizontal position¹². The movement is especially pronounced if the patient lie back suddenly. What is the mechanism of this movement?

In order to understand the interpretation of the movement which I propose, it is necessary first to analyze the act of rising to a sitting position. The essential movement of this act is conscious. It is forward inclination of the pelvis and vertebral column, and this inclination can only take place normally when the thighs have been previously immobilized. In fact, when we consider the mode of action of the psoas, which, in accordance with whether it takes its fixed point at its superior or inferior insertion, flexes the thigh on the pelvis or brings forward

the pelvis and the vertebral column, we can understand that, with absence of extension of the thigh, the act we are considering must cause forward inclination of the body with flexion of the thigh on the pelvis. This extension of the thigh is brought about by conscious or sub-conscious activity of the muscles which extend the thigh on the pelvis. I assume that it is the weakness of the latter which causes the phenomenon in question. Moreover, the reality of this paresis is incontestible; for, when the patient, lying on his back, tries to maintain the lower extremities fixed against the floor as forcibly as possible, it is much easier to lift up (passively) the leg on the paralyzed side.

This phenomenon, which I have called the *associated movement of flexion of the thigh*, depending, if my interpretation be correct, upon a mechan-



FIG. 3.—Left organic hemiplegia, one year old; combined flexion of the thigh and trunk on the left side. Courtesy "Gazette des Hopitaux."

ism very different from that which is in play in the various varieties of associated movements in hemiplegia, might be preferably called *combined flexion of the thigh and trunk*, which describes the movement simply and with precision.

It is easy to understand why the movement of flexion of the thigh is also induced when the patient, after having reached a sitting posture, tries to resume the original reclining position. In fact, it would be wrong to conclude that in this act the patient limits contraction to the muscles which incline the body backwards. If this were true the upper part of the body carried down by force of weight would forcibly fall against the floor. The extension of the body must be moderated by the contraction of the flexors which diminishes progressively, and this contraction of the flexors in order to be efficient necessitates previous fixation of the thighs. The conditions, therefore, are alike in both cases.

Another consideration, which inclines me to believe that this interpretation is correct, is that I have observed the movement of combined flexion of the thigh in several cases of sciatica, in which the extensor muscles of the thigh on the pelvis were atrophied. But no matter whether my explanation of the mechanism of this phenomenon is exact or not, its reality is incontestible, and that is the essential point.

I should call your attention to the fact that normally fixation of the thigh varies to some extent with the individual, and this, no doubt, is one reason why all persons do not rise to a sitting posture with the same facility; while some in the act maintain the thighs against the floor, others raise them more or less in a movement of flexion on the pelvis; but in normal persons when the thighs are fixed under such circumstances the movement is approximately equal on both sides. Nevertheless, since without hemiplegia there may be a slight difference between the two sides, the movement of combined flexion of the thighs and trunk can be considered as pathologic only when absent on one side, it is marked on the other, or when, if it occur on both sides, it is decidedly more marked on one side than on the other.

The movement of combined flexion of the thigh and trunk naturally implies that the limbs are capable of a certain amount of movement; thus, theoretically, it should be absent when paralysis is complete, and observation confirms this. In fact, generally it is only some time after the beginning of hemiplegia, when the paralysis is somewhat attenuated, that the phenomenon appears. In the earliest phase of hemiplegia, since the lack of power on the paralyzed side is complete, either the patient is so prostrated that he is not capable of the least effort, or when he tries to assume a sitting posture he makes a movement of rotation around the long axis of the body toward the paralyzed side: this movement seems to me to be the result of the limited action on one side of the body of the muscles which incline the trunk forward.

In hysteric hemiplegia the phenomenon which I have just described does not occur. When the hysteric patient is made to lie on the back and is told to rise to a sitting posture, either he remains motionless or declares that he cannot do what is asked, or he rises to a sitting posture like a normal individual; or, finally, he may make movements of the trunk and limbs which are very different from the movement of *combined flexion of the thigh and trunk*.

The condition of the tendon and bone reflexes furnish evidence of the greatest importance for the solution of the problem we have in hand; at least this is my belief, but concerning this there are differences of opinion among neurologists.

As far as organic hemiplegia is concerned all agree in admitting that in the beginning the tendon reflexes on the paralyzed side may be normal, exaggerated, enfeebled or abolished, while in the second period, that is to say, after the fourth or fifth week, the reflexes are almost

always exaggerated, except when there is a concomitant lesion of the posterior spinal roots. We also note in many patients foot-clonus, and sometimes hand-clonus.

This is not true of hysteric hemiplegia; many physicians think that if exaggeration of the reflexes on the paralyzed side is rarer in this affection than in organic hemiplegia, nevertheless it may be found; and the same is true of enfeeblement or abolition of the reflexes, and that therefore the anomalies of the reflexes cannot be regarded as a differential characteristic of great value.

In an article published seven years ago¹³ I expressed a contrary opinion, and the experience I have since had has only strengthened me in this view. I think that hysteric paralyses in general, and hysteric hemiplegia in particular, exert no influence on the tendon reflexes.

I must add that appreciation of the condition of the tendon reflexes is not so easy that it does not present difficulties, the principal one of which is that their manifestation may be distorted by psychic influence; in fact, the movement of one segment of a limb resulting from percussion of the tendon, and which gives an apparent measure of the intensity of the reflexes may be, by a motor act of psychic origin attenuated or exaggerated, depending upon whether the effects of these two phenomena are opposed or act together.

In order to eliminate the influence of the second factor, when we examine the knee-jerks the patient is told to close the eyes, to relax the muscles of the lower extremities; and in order to attain this end more readily, to contract forcibly the muscles of the upper extremities. In spite of these precautions we do not always easily obtain the desired result, and it may be necessary to repeat the examination several times in order to be certain of the condition of the reflexes.

The difficulties are still greater in hysteric persons, as will be readily understood, and if careful attention is not given, mistakes are apt to occur. Percussion of the tendons of an hysteric person may be followed on both or on one side only by an energetic jerk, and this gives rise to the impression that the reflexes are exaggerated. When the foot is forced upward sometimes there is a trepidation of it, which in some cases is propagated to the whole limb, and resembles foot-clonus. But if we look closely, if we carefully analyze this phenomenon, we usually are able to recognize its true value. At least it is my opinion that this exaggeration of reflexes is only apparent; that the movement observed is composed of two elements, which represent the effects of two very different acts: on the one hand, a movement having an amplitude equal to and a form identical with that of the normal reflex (actual tendon reflex); on the other hand, a movement much more extensive and of psychic origin (pseudo-tendon reflex). Usually a simple glance serves to distinguish these two phenomena; thus one may affirm in certain cases that the movement following percussion of a tendon is not due to

a true tendon reflex, because the time elapsing between percussion and reaction is too long; or because of the manner in which the muscles contract; or the nature of the movement does not present the features which characterize the true tendon reflex; or because a similar movement may be induced by percussing a point near a tendon; or, finally, because the condition of the reflex undergoes certain noticeable modifications at short intervals. Similarly with reference to foot-clonus, it may be seen that the phenomenon is not a veritable trepidation of the foot, but an imitation of this phenomenon quite different from true foot-clonus.

I wish especially to call your attention to the radial reflex, which is brought out by percussing the radius at its lower extremity, and which, though rarely investigated, should be examined as often as any other, and even more frequently, because, when it is really exaggerated, this exaggeration is manifest in a movement of such intensity, and especially of such quickness, that it is difficult to imitate it.

Thus abolition or the exaggeration of the tendon reflex, as on the paralyzed side in hemiplegia, affords an important index to organic lesion of the nervous system, and suffices to cause the rejection of any idea of hysteric paralysis. Indeed, it would be almost a decisive differential characteristic if hysteric hemiplegia were always manifest in a pure state. But this is not the case, and we sometimes encounter difficulties in diagnosis which depend upon the fact that hysteric paralysis or contracture may be associated with an organic paralysis; or hysteric paralysis may develop in a limb in which the tendon reflexes are exaggerated as a result of some other concomitant affection. For example, here is a person presenting a lesion of the ankle joint which has caused exaggeration of the tendon reflex with foot-clonus; this lesion has also induced hysteric contracture of the lower limb; a superficial observer might consider that exaggeration of the reflex depended upon hysteria.

I should add, however, that I have seen in one case of crural hysteric contracture, which seemed to be pure, trepidation of the foot which seemed to me to be identical with true foot-clonus. I am inclined to believe that this phenomenon was the result of irritation of the fibro-tendonous tissues about the joint itself, due to the vicious attitude of the foot which had existed for several months, and that in reality the foot-clonus was but indirectly due to the hysteric contracture. At all events, absence of the foot-clonus in hysteric hemiplegia might be considered, if not a law, at least a rule which is subject to but few exceptions.

While the tendon reflexes have for a long time been carefully examined by neurologists in systematic investigation of the affections of the nervous system, the study of the cutaneous reflexes has been neglected. It is simply considered that in organic hemiplegia these reflexes are sometimes enfeebled or abolished on the paralyzed side, but in classic

treatises the question whether disturbance of them might serve to differentiate the two kinds of hemiplegia is not discussed.

I should say, however, as far as the cutaneous abdominal reflex is concerned, that Rosenbach,¹¹ who was the first to call attention to the loss of this reflex in organic hemiplegia, is of the opinion that this loss does not occur in hysteric hemiplegia. My own observation seems to justify Rosenbach's opinion. I do not believe that hysteria can, like an organic affection of the brain, abolish the cutaneous abdominal reflex, and in the majority of cases of hysteria that I have examined I have seen a reflex movement follow excitation of the skin of the abdomen. Nevertheless, in some hysteric persons presenting hemianesthesia I have not been able to excite any movement. In such a case, I do not think that we have to do with the true abolition of the reflex, and I assume that the reflex movement is simply masked by voluntary contraction of the muscles of the abdominal wall.

At all events, absence of movement of the abdominal wall after excitation of the skin of the abdomen in a case of hemiplegia should be considered as an uncertain indication of organic lesion.

Abolition of the cremasteric reflex on the paralyzed side, coinciding with the presence of the reflex on the normal side, is not rare in organic hemiplegia, and it seems to me to have more value for diagnosis than abolition of the abdominal reflex.

The movements which follow excitation of the sole of the foot in many cases of organic hemiplegia are feebler on the paralyzed side than on the sound side. But this may be true in hysteric hemiplegia, and what I have said concerning the abdominal reflex is also applicable to the plantar reflex. Still the cutaneous plantar reflex affords for differential diagnosis indications of the greatest importance, if, instead of being content, as observers have been up to the present time, to simply note the degree of its intensity, the form of the movement is taken into consideration.

A few years ago I demonstrated that in the normal state in the adult excitation of the sole of the foot induces, among other reflex movements, flexion of the toes and metatarsal bones, and never extension of them; on the other hand, when there is disturbance in the pyramidal tracts, excitation of the sole of the foot usually causes extension of the toes, and in particular of the great toe. This pathologic modification of the form of the reflex movement I have called the toe-phenomenon, and I gave a detailed description of it in a lecture published in the *Semaine Medicale*¹⁵, to which I beg to refer you. In organic hemiplegia, depending upon a lesion involving the pyramidal tracts, this sign is observed on the paralyzed side; it is to be found in the majority of cases of hemiplegia, and it is ordinarily more marked in recent hemiplegia than in old hemiplegia. I have also seen this sign in patients afflicted simulta-

neously with old hemiplegia and tabes, whose tendon reflexes were abolished.

In hysteric paralyses I have never seen the toe-phenomenon, and I think that if its absence does not permit us to put aside the hypothesis



FIG. 4.—Left organic hemiplegia of one year's duration. Right foot in repose. Courtesy "Gazette des Hopitaux."



FIG. 5.—The right foot of same patient when irritated by a needle. Courtesy "Gazette des Hopitaux."

of an organic affection of the central nervous system, its presence justifies us in affirming the existence of such an organic affection.

Its semeiologic value is also especially great in cases in which the tendon reflexes do not enable us to determine the condition of the pyramidal

tracts. In recent organic hemiplegia the tendon reflexes are generally normal or weakened, and all agree that it is almost impossible to distinguish, during the first period, hysteric hemiplegia from organic hemiplegia. In all cases of this kind the existence of the toe-phenomenon is particularly valuable, for it permits us to affirm that the paralysis is organic.

The result of my researches has been confirmed by many writers, and particularly by von Gehuchten¹⁶, Glorieux¹⁷, Ganault¹⁸, Letienne and Mireouche¹⁹, Collier²⁰, Buzzard²¹, Kalischer²², Boeri²³, Accitite²⁴, Koenig²⁵, Cestan et L. Le Sourd²⁶, Zlotoroff²⁷, Langdon²⁸, Chaddock²⁹. However, M. Schueler³⁰, while recognizing the sign as an index of organic lesion, does not consider it as absolutely characteristic. Martin Cohn³¹ and Guidiccandra³² are the only ones who are in complete discord with me; but it seems clear to me that they, in their investigations, have committed some errors of technique against which I gave warning.

The contractures of organic hemiplegia have a distinctive appearance different from those present in hysteric hemiplegia, and thus afford elements for diagnosis. The contracture of organic hemiplegia usually causes a special gait, which was described in a masterly manner by Todd. The patient inclines the trunk toward the side opposite the paralysis, and makes a movement of circumduction with the paralyzed limb—he mows. Nothing like this is seen in hysteric hemiplegia. I shall say nothing more on this subject because it is so well known.

I wish, on the contrary, to insist upon the position of the hand and fingers, particularly the grip observed in many cases of organic hemiplegia, due to the contracture. When the contracture is intense and the flexion of the fingers is very pronounced, we are able to make some movement of the fingers and slip our hand under the fingers and into the palm of the patient. If, after having done this, an effort is made to extend the patient's fingers, we feel a resistance which gives the impression of elasticity and a slight degree of trepidation; besides, as the hand is moved into extension on the forearm the phalanges flex on each other and the metacarpals, and thus press the hand of the observer. There results from this characteristic impression a sensation observed clearly in examining the majority of patients suffering with spasmodic organic hemiplegia, if the paralysis be sufficiently marked. I have never observed this sign in hysteric hemiplegia with contracture, and I regard it as a sign absolutely characteristic. I described the sign for the first time in my work I have already mentioned on organic and hysteric contractures. I would add that hysteric contracture of the upper extremity is ordinarily more pronounced; the ends of the fingers are in contact with the palm. In order to give an idea of the form of hysteric contracture, I will say that voluntary contraction of the muscles may reproduce it perfectly, while organic contracture can be but very imperfectly imitated.

Finally, paralysis of the limbs, like paralysis of the face, presents distinctive characteristics in its mode of evolution. In ordinary organic hemiplegia the progress of the malady is regular, contracture follows flaccidity, the improvement and progress of the paralysis itself is not



FIG. 6.—Patient of figure 4 and figure 5, left foot in repose. Courtesy "Gazette des Hopitaux."



FIG. 7.—The same foot as in figure 6 when irritated with a needle; the toe phenomenon. Courtesy "Gazette des Hopitaux."

subject to alterations of improvement and aggravation. Ordinarily in hysteric hemiplegia the contrary takes place; its evolution is capricious; the paralysis may remain limp indefinitely, just as it may be spasmodic from the beginning; it is often subject to transitory remissions, which last a few minutes and which facilitate diagnosis.

Here, for example, are two patients, the one suffering with organic hemiplegia and the other with hysteric hemiplegia, and both appear to be unable to execute any movement with the arm. Let us take the paralyzed arm, raise it and then immediately leave it without support, repeating this experiment several times while talking to the patient in order to distract attention from what we are doing. You will note that in the first case the paralyzed arm falls back like an inert body the moment it is no longer sustained; and the same result is observed every time we try the experiment. In the hysteric patient you will note generally the same fact in the majority of experiments you make, but it may happen that once in a while when the arm is raised it remains in the attitude a longer or shorter time after you have removed the support. This characteristic, which is always wanting in organic hemiplegia, is of the greatest importance in diagnosis.

You may also examine for this characteristic in another way. Support with your arm the paralyzed limb, raising it to a certain height; an inert limb in obedience to the law of gravitation would give an impression of weight and call for a certain static effort which would be constant if the patient were suffering with organic hemiplegia; but had you to do with an hysteric patient, this impression would change in character and might quite disappear for a short time.

You see from what has been said that the disturbances of motility in hysteric hemiplegia are notably different from those which belong to organic hemiplegia.

You have also noted that hysteric hemiplegia is distinguished much less by the presence of certain special signs than by the absence of certain objective characteristics which mark organic hemiplegia.

In order to understand why these characteristics are wanting in hysteric hemiplegia it is necessary at once to try to understand the mechanism of hysteric paralysis.

Certain observers admit that the influence which produces the phenomena of hysteria may be localized in various regions of the cerebral cortex especially in the motor centers, and thus determine manifestation, analagous to those which result from an organic alteration of the same areas. Without doubt it is in part due to this pathogenic conception that hysteria has been regarded as capable of bringing about paralyses identical clinically with those due to organic lesions of the brain—a gross error, if what I have explained to you is exactly as I believe it to be.

The notion to be entertained of the mechanism of hysteric paralysis is quite different.

This phenomenon, as well as other manifestations of hysteria, cannot be regarded as the result of a functional trouble limited to an anatomic territory, but rather it must be considered as a disturbance of what the psychologists call the ego.

Of what does this disturbance consist, or, what amounts to the same thing, what state of mind induces in an individual hysteric paralysis? Two interpretations seem to me tenable. We may suppose that the patient has lost the power to evoke motor images corresponding to the movement; that he is unable to carry out or that his will is incapable of executing, certain movements. It is possible that each of these interpretations, one of which does not exclude the other, may be applicable to a given group of phenomena.

I should add to what I have said that hysteric paralysis may be reproduced in certain hypnotized subjects by suggestion, and the identity of these two kinds of paralysis seems to demonstrate perfectly that the paralysis which results from hysteria is due either to suggestion or auto-suggestion. I cannot develop further the study of the mechanism of hysteric paralysis, for it would necessitate a long discussion. What I have said is sufficient to make clear, and that is the object I had in view, that hysteric paralysis, since it is a central disturbance, is the result of an anomaly of the imagination or the will and can only be manifested in phenomena which are subject to the influence of the imagination, will and suggestion. Thus it is easy to understand that hysteric paralysis implicates neither muscular tonicities nor reflex movements, whether tendinous or cutaneous, anomalies of which constitute the most important characteristics of organic hemiplegia. These modes of muscular action are, in fact, not subject to the influence of the will or imagination. As I have already indicated, the will may apparently alter the reflexes, but in reality it cannot abolish or change them.

It is also evident that the contracture of organic hemiplegia, which depends upon a lesion of an anatomic system of fibers, presents a special form which the will cannot bring about, and which is never observed in hysteria; further, that hysteric contracture can be imitated with rigorous exactness by voluntary muscular action.

It is also easy to understand why the sign of the platysma is wanting in hysteric hemiplegia. It is well known that in the greater part of voluntary movements several muscles are called into action, and the will cannot exclude the action of one of these muscles. Energetic opening of the mouth, as well as sudden flexion of the head and neck, brings the platysma into action. But the sign of the platysma, occurring in organic hemiplegia, if the explanation I have given is correct, is due to the fact that in the movement in question, the contraction of the platysma is feeble or absent on the paralyzed side. This sign should be wanting in hysteric hemiplegia, and if it seemed to be present in such a case, it would depend probably upon simulation of the sign resulting from voluntary unilateral contraction of the platysma, associated with the movement of opening the mouth or of flexion of the neck.

If, in hysteric hemiplegia the disturbances of motility of the face are generally bilateral, this is due to the fact that in the majority of volun-

tary movements of the face the two sides functionate together, and they will bring about unilateral disturbance of the muscular action of the face only with difficulty.

I have told you that the phenomenon of *combined flexion of the thigh and trunk*, as seen in organic hemiplegia, does not belong to the symptomatology of hysteric hemiplegia. In the first place, I repeat that the complex action which consists of rising to a sitting posture is made up of two kinds of movements—the one conscious, that is, flexion of the trunk and pelvis on the thigh; the other subconscious, that is, extension of the thigh on the pelvis; and that the phenomenon in question depends upon the weakening of the extensors of the thigh. Auto-suggestion can scarcely have any influence upon unconscious or sub-conscious movement: this doubtless is why the sign of *combined flexion of the thigh and trunk* is absent in hysteric hemiplegia. Nevertheless, the two kinds of movement which make up the action we are considering may be executed voluntarily independently of each other, and we can see that hysteric persons might produce by imitation, at least approximately, the phenomenon in question. Though I have never seen it in hysteria, it still seems to me it might be found there.

Finally, it is quite natural that, contrary to what takes place in organic affections of the brain, hysteric paralysis should be systematic and subject to alternations of improvement and aggravation; in certain cases it may disappear completely for a time. We easily understand then that imagination, will, and suggestion disassociate the various modes of voluntary movement by abolishing certain systems of movement exclusively, and that a cause subject to many variations determines the same variability in the symptoms produced.

I have already touched upon the question of the mechanism of hysteric disturbances. As I have said, I cannot enlarge upon it; however, I would add that the preceding statements are applicable only to those hysteric manifestations which are, in fact, the commonest and which are prone to appear and disappear from moment to moment, in contrast with certain other anomalies allied to hysteria, like amyotrophy and fibrotendonous retractions which never develop except secondarily to primitive anomalies, and in the genesis of which no influence is exercised by will, imagination, or suggestion.

I give in the form of a table the characters of the troubles of motility which distinguish organic hemiplegia from hysteric hemiplegia:

ORGANIC HEMIPLEGIA.

1. The paralysis is limited to one side of the body.

HYSTERIC HEMIPLEGIA.

1. The paralysis is not always limited to one side of the body; this remark is applicable especially to paralysis of the face, in which usually the disturbance is bilateral.

ORGANIC HEMIPLEGIA.

2. The paralysis is not systematic. If, for example, the unilateral movements of the face are much enfeebled, the lack of power is also present on the side of the hemiplegia during the execution of bilateral synergic movements.

3. The paralysis implicates conscious voluntary movements as well as unconscious and sub-conscious movements; thus we observe the two phenomena, one of which we call the *sign of the platysma*, and the other *combined flexion of the thigh and trunk*.

4. The tongue usually deviates slightly toward the paralyzed side.

5. There is, principally during the initial stage, muscular hypotonicity which may show in the face in the lowering of the commissure and the lowering of the eyebrows, etc., and in the arm in the phenomenon that I have called *exaggerated flexion of the forearm*.

6. The tendon and bone reflexes are often disturbed from the beginning; they may be either abolished, weak, or exaggerated. Later they are almost always exaggerated, and in many cases there is foot-clonus.

7. The cutaneous reflexes are usually disturbed.

The abdominal and cremasteric reflexes are ordinarily, especially in the early stage, weak or abolished.

The reflex movement of the toes following excitation of the sole of the foot ordinarily undergoes an inversion of form, the toes, instead of reflexing extend. This sign, which I have called the *toe-phenomenon*, may be found in all stages of hemiplegia.

8. The form of contracture is particular and cannot be reproduced by a voluntary contraction of the muscles.

9. The evolution is regular; contracture follows flaccidity; improvement is pro-

HYSTERIC HEMIPLEGIA.

2. The paralysis is sometimes systematic; in the face it is almost always so. For example, the unilateral movements of the face may be completely abolished, while the muscles on the side of the hemiplegia functionate normally during the execution of bilateral synergic movements.

3. Unconscious and sub-conscious voluntary movements are not disturbed; thus there is absence of the *sign of the platysma* as well as absence of *combined flexion of the thigh and trunk*.

4. The tongue sometimes deviates slightly toward the paralyzed side, but this deviation of the tongue may also be very pronounced or take place toward the sound side.

5. There is no muscular hypotonicity. When there is facial asymmetry, it is possible to determine that it is due not to muscular hypotonicity but to spasm. The sign of *exaggerated flexion of the forearm* is wanting.

6. The tendon and bone reflexes are not modified and foot-clonus does not occur.

7. The cutaneous reflexes are not altered.

The abdominal and cremasteric reflexes are ordinarily normal.

Reflex movement following excitation of the sole of the foot does not undergo inversion. The toe-phenomenon is wanting.

8. The form of contracture may be reproduced by voluntary contraction of the muscles.

9. The evolution is capricious; the paralysis may remain flaccid indefinitely,

ORGANIC HEMIPLEGIA.

gressive; the paralysis is not subject to alternation in improvement and aggravation.

HYSTERIC HEMIPLEGIA.

or it may be spasmodic from the beginning; spasmodic phenomena are associated sometimes, especially in the face, with paralytic phenomena. The symptoms may improve or be aggravated alternately from time to time, or be rapidly modified in their intensity and form, or present transitory remissions lasting only a few moments.

In the description I have given of organic hemiplegia, I have had in mind common hemiplegia, which depends upon a lesion of the cerebral cortex, of the centrum ovale, or of the internal capsule.

There are certain varieties of organic hemiplegia due to lesions occupying other parts of the pyramidal tracts, which, owing to their special localization, present peculiar clinical features in the disturbance of motility, which aid in distinguishing them from hysteric hemiplegia.

Crossed hemiplegia, known as the syndrome of Millard-Gubler, which depends upon a lesion of the inferior part of the pons, presents itself as paralysis of one side of the body on which the limbs exhibit all the characteristics belonging to common hemiplegia, and paralysis of the sixth and seventh cranial nerves on the opposite side. This facial paralysis presents all the characteristics of peripheral facial palsy with reaction of degeneration. Paralysis of the nerves, trunks, and reaction of degeneration being foreign to the symptoms of hysteria, their presence in crossed hemiplegia facilitates the diagnosis.

Paralysis of the third pair also aids in the exclusion of the hypothesis of hysteria in that variety of hemiplegia described by Weber in which the ordinary symptoms of hemiplegia are associated with paralysis of the motor oculi on the opposite side.

I have studied successively the various motor characteristics that serve to distinguish organic hemiplegia from hysteric hemiplegia, and I have sought to establish their value. Are there any of them that are pathognomonic? As I have already said I believe that there are, and I am especially sure with regard to the toe phenomenon.

But let us admit that there is not a single one that is absolutely decisive. Still, it seems to me certain that when several of them are found in the same individual, doubt is scarcely possible. Usually this is the case, no matter what the stage of hemiplegia.

Thus in conformity with what I sought to demonstrate, in the great majority of cases if our conclusion be founded upon the intrinsic characteristics, we are in a position to form a precise opinion and recognize whether hemiplegia depends upon hysteria or an organic affection of the central nervous system.

BIBLIOGRAPHY.

1. Bull. de la Soc. anat. de Paris, 1898, p. 739.
2. Voir a ce sujet: "Association de l'hysterie avec les maladies organiques du systeme nerveux, les nevroses et diverses autres affections," par J. Babinski, Bull. de la Soc. med. des hopit. de Paris, 1892, p. 775.
3. Charcot. Spasme glosso-labie unilateral des hysteriques, Semaine med., 1887, p. 37.
4. Brissaud et Marie. De la deviation faciale dans l'hemiplegie hysterique, Progres med., 1887, pp. 84, 128.
5. Ballet. Bull. de la Soc. med. des hopit., 1890, pp. 410, 800.
6. Chantemesse. Id., 1890, p. 797.
7. Koenig. Neurol. Centralbl., 1892, p. 337.
8. Babinski. Bull. de la Soc. med. des hopit., 1892, pp. 706, 738, 867.
9. Spasme associe du peaucier du cou du cote sain dans l'hemiplegie organique, par J. Babinski, Bull. de la Soc. med. des hopit. de Paris, 30 juillet 1897.
10. Relachement des muscles dans l'hemiplegie organique, par J. Babinski, C. R. de la Soc. de biol., 1896, p. 471.
11. Voir a ce sujet: "L'etat des reflexes et la contracture dans l'hemiplegie organique," par Van Gehuchten, Semaine med., 1898, p. 507.
12. Pour plus de details voir: "De quelques mouvements associes du membre inferieur paralyse dans l'hemiplegie organique," par J. Babinski, Bull. de la Soc. med. des hopit. de Paris, 30 juillet 1897.
13. Contractures organique et hysterique, par J. Babinski, Bull. de la Soc. med. des hopit. de Paris, 5 mai 1893.
14. Voir a ce sujet le travail de Ganault: Contribution a l'etude de quelques reflexes dans l'hemiplegie de cause organique, Th. de Paris, 1893, p. 102 et suiv.
15. J. Babinski. Du phenomene des orteils et de sa valeur semiologique, Semaine med., 1898, p. 321 et suiv.
16. Van Gehuchten. Journ. de neurol., 5 avril, 20 juin, 5 juillet 1898.
17. Glorieux. Le phenomene des orteils ou reflexe de Babinski, Journ. de neurol., 5 dec. 1898.
18. Ganault. Th. de Paris, 1898.
19. Letienne et Mircouche. Du reflexe cutane plantaire, Arch. gen. de med. 1899, p. 191.
20. Collier. An Investigation Upon the Plantar Reflex, Brain, Journ. of Neurol., 1899, Part LXXXV.
21. Buzzard. Brit. Med. Journ., 1899, No. 2001, p. 1077.
22. Kalischer. Ueber den normalen und pathologischen Zehen-Reflex, Virchow's Archiv, 1899, bd. CLV.
23. Boeri. Sul Fenomeno di Babinski, Riforma med., Nos. 146, 147, 148, anno XV.
24. Acchiote. Gaz. med. d'Orient, 1899, p. 225.
25. Koenig. Neurol. Centralbl., 1899, p. 610.
26. Cestan et L. Le Sourd. Contribution a l'etude de "phenomene des orteils" de Babinski, Gaz. des hopit., 1899, p. 1249.
27. Zlotoroff. Th. de Toulouse, 1900.
28. Langdon. The Plantar Reflex and Babinski's Sign, The Cincinnati Lancet Clinic, 17 fev. 1900.
29. Chaddock. Clinical lecture delivered at the St. Louis City Hospital, The Med. Fortnightly, Vol. XVII, No. 5.
30. M. Schueler. Neurol. Centralbl., 1899, No. 13, p. 585.
31. M. Cohn. Neurol. Centralbl., 1899, No. 13, p. 580.
32. Giudicecandra. Bull. Soc. Lancisiana, 1899, fasc. 1, p. 226.

CONSERVATION OF THE PARIETAL MOTOR NERVES IN ABDOMINAL SECTION.*

BY VILRAY PAPIN BLAIR, M. D., of St. Louis.

Apparently so little attention is paid by the majority of operators to the trunks or distribution of the nerves supplying the abdominal region, that one might conclude that their preservation is a matter of no importance. Nevertheless, they do receive consideration from many men, and the general fact that section of a motor nerve is followed by atrophy of its muscle fibers; the particular observations of Assmy, made at the instigation of Czerney, showing that even the vertical incision in the rectus causes degeneration of the portion of the muscle mesial to the cut nerve fibers; and the assiduous care with which such a sound thinker as Kocher always and in all cases seeks to avoid the section of even small nerve trunks, lead me to present this paper for your consideration.

Before presenting any work, two questions should be answered in the affirmative: First, is there any reason for such work? Second, is there any reasonable possibility for its execution?

As to the first, while no anatomical change is an evil until it produce symptoms, still the interdependence of the parts of the whole body for their normal function is so intimate and far-reaching that one can hardly think of a large area of the abdominal parietes being deprived of contractile power without believing that there must in all cases be an extra effort on the part of the unparalyzed muscles to bring about compensation, and when this compensation is defective there will be a tax on the involuntary muscles, which, if too great, will result in exhaustion, imperfect function and neurosis.

So long as we continue to refer to all patients without tangible lesions as neurasthenics, we are not in a position to say that this or any other anatomical change, no matter how small, is without consequence; nor that, in some cases, a certain number of the disagreeable symptoms often seen following abdominal section are not from this cause.

The fact that these symptoms are often transitory, and that they occur after median section, does not disprove my point, for compensation, when established, will correct the symptoms, and this, at most, must be but one of a number of causes of post-operative neurasthenia. Granted that compensation is established, we can never foretell in what case further operative procedure, nerve lesions, or age, may weaken or render functionless other muscular areas, which will later destroy this compensation and add an extra burden to the declining functions of age.

The second question, is the procedure practical? is to be answered by saying that in some instances it is so difficult as to be put down as im-

* The anatomy basis of this paper is from the anatomical laboratory of the Washington University Medical School.

Read before the St. Louis Surgical Club, May 10, 1905.

practical; but, in most cases, by properly directing the incision, or by picking up nerve trunks where they are easily found, it is possible to avoid cutting them. In the following pages it is proposed to show just in what classic cuts the nerves are to be avoided, and how; and to give the lines upon which incisions may be made which will likely pass between the nerve trunks.

While every student of medicine can locate each intercostal nerve, few stop to think that the abdominal continuations are almost constant in their position.

Upon the origin and distribution of these nerves exact observations have been made by Bardeen¹, while Head² and others have given their general areas of distribution. As to the exact course of the trunks and



FIG. 1.—Showing incision from lower border of twelfth rib to linea semilunaris. The twelfth nerve having been isolated at this line, the incision is extended upwards and the flap raised. Posteriorly the twelfth nerve is shown in the upper lip of the wound and hypogastric in the lower lip, while the twelfth nerve is also shown where it has been picked up and drawn out at the linea semilunaris to allow the flap to be turned upward.

their landmarks, little more is to be found in text-books than that they continue forward in the same direction that they had in the chest wall, between the internal oblique and transversalis muscles. Cunningham's statement that they run parallel to a line drawn from the tenth costal cartilage to the umbilicus is as true as any general rule on the subject.

In order to tabulate reliable data, more exact than given in text-books, I wrote down my conclusions from observations made in the anatomical laboratory of the Washington University Medical School, and then

undertook to verify them by the examination of special dissections on ten subjects. The accompanying table gives the result.

CONCLUSIONS DRAWN FROM GENERAL OBSERVATIONS.	THEIR VERIFICATION ON TEN SUBJECTS.									
Body No.	1	2	3	4	5	6	7	8	9	10
The 7th nerve emerges into the sub-costal angle mesial of the 8th cartilage or turns up towards the chest from between the 7th and 8th. at or near a line drawn between the upper borders of the 7th costo-condral junctions.	$\frac{1}{4}$ inch below.	$\frac{1}{4}$ inch above.	*	1 inch above.	*	*		$\frac{1}{2}$ inch above.	■	*
The 8th nerve emerges at a line drawn between the upper borders of 8th costo-condral junctions and turning upwards runs parallel and close to the sub-costal border before entering the rectus muscle.	*	■	*	*		*	*	*	*	■
The 9th nerve emerges at the intersection of the projected lower border of the 8th rib with the sub-costal border.	■	*	*	■	■	*	*	*	*	$\frac{1}{4}$ inch above.
The 10th nerve is found below the lowest part of the 10th costal cartilage at a distance of	$\frac{1}{2}$ inch below.	$\frac{1}{2}$ inch below.	$\frac{1}{4}$ inch below.	$\frac{1}{4}$ inch below.	$\frac{1}{4}$ inch below.	$\frac{1}{4}$ inch below.	$\frac{1}{4}$ inch below.	$\frac{1}{2}$ inch below.	$\frac{1}{2}$ inch below.	$\frac{1}{2}$ inch below.
The 11th nerve is found below tip of the 11th rib at a distance of	$\frac{3}{4}$ inch below.	$\frac{1}{2}$ inch below.	$\frac{1}{2}$ inch below.	$\frac{1}{4}$ inch below.	$\frac{1}{2}$ inch below.	$\frac{1}{4}$ inch below.	$\frac{1}{4}$ inch below.	$\frac{1}{4}$ inch below.	$\frac{1}{2}$ inch below.	$\frac{1}{2}$ inch below.
The 12th nerve is found below the tip of 12th rib at a distance of	$\frac{3}{4}$ inch below.	1 inch below.	1 inch below.	$\frac{1}{4}$ inch below.	$\frac{3}{4}$ inch below.	1 inch below.	1 inch below.	$\frac{1}{2}$ inch below.	1 inch below.	$\frac{1}{2}$ inch below.
The 9th nerve crosses behind the outer border of the rectus before piercing aponeurosis of the Int. oblique at or above the level of the point it emerges from sub-costal border.	■	■	■	*	■	*	Slightly above.	*	Slightly above.	*
The 10th nerve crosses semi-lunar line by one, sometimes two, branches, usually before piercing aponeurosis of Int.oblique, about midway between level of umbilicus and lower border of 10th cartilage.	*	■	*	■	Slightly above.	*	*	Slightly above.	■	*
The 11th nerve crosses semi-lunar line and enters the sheath of rectus anywhere between the level of umbilicus and one-third the distance to the pubis in one trunk or several branches.	$\frac{1}{4}$ the distance down.	Several branches range from $\frac{1}{4}$ to $\frac{1}{4}$ distance down.	$\frac{1}{4}$ the distance down.	$\frac{1}{4}$ the distance down.	Several branches $\frac{1}{8}$ to $\frac{1}{4}$ the distance down.	Several branches $\frac{1}{8}$ to $\frac{1}{4}$ the distance down.	$\frac{1}{8}$ the distance down.	At level of umbilicus.	$\frac{1}{4}$ the distance down.	$\frac{1}{4}$ the distance down.
The 12th nerve crosses semi-lunar line and enters sheath of rectus about one-half way between the umbilicus and pubis by one, sometimes two, branches.	*	*	*	*	*	*	*	■	*	Slightly above.
The trunk of the hypogastric nerve will be found first in the substance of the Int. oblique and then between that muscle and Ext. oblique about one finger's breadth above Poupart's ligament.	*	*		*		*	*	*		■

A line drawn from the 12th dorsal spine to the upper part of the tubercle on the outer lip of the crest of the ilium will closely correspond to the course of the hypogastric nerve after it emerges from cover of the quadratus lumborum. It here lies under the origin of the transversalis muscle. The inguinal nerve may be in a common trunk with the above, or a little below; both nerves may be slightly behind this line at its upper part.

*	*	*	*	*	*	*	*	*	*
---	---	---	---	---	---	---	---	---	---

A transverse cut through the parietes in the sub-costal angle in a line passing along the lowest point of the 8th cartilage would pass between the 8th and 9th nerve trunks and would be of the following lengths. This is a safe cut.

5	5	5½	5½	5	5	6½	5	5	5
inches.	inches.	inches.	inches.	inches.	inches.	inches.	inches.	inches.	inches.

An angular or semi-lunar incision extending from the sub-costal borders at the point of intersection of the projected lower borders of the 9th ribs or a little above, would, for most cases, pass between the trunks of the 9th and 10th nerves, and would be of the following lengths or greater. In some cases this might cut the 10th nerve.

7	7½	7½	8	7	8	9	8	8	8
inches.	inches.	inches.	inches.	inches.	inches.	inches.	inches.	inches.	inches.

A cut from the tip of 11th cartilage to the umbilicus would pass between the 10th and 11th nerves.

*	*	*	*	*	*	*	*	*	*
---	---	---	---	---	---	---	---	---	---

* Corresponds with the statement in the first column. A blank space was left where no perfectly satisfactory observation could be made.

The following developmental facts bear directly on our subject. The primary ventral cutaneous branches of about the lower six thoracic nerves are caught between the successive tips of those myotomes which give rise to the rectus muscle, and in this way the segmental arrangement of the nerves of the abdomen is early insured.³

The transverse tendons of the rectus abdominis muscle in man correspond to the seventh, eighth, ninth, tenth and eleventh ribs.⁴ Of them the tenth, corresponding to the umbilicus, is very constant, while the eleventh is very often absent. It was so in all but one of the bodies here tabulated. The seventh and eighth nerves enter their segments of the rectus below, while the tenth and eleventh enter above the corresponding lineæ transversæ. With all, those nerves tend to have constant positions that go to segmented portions, while the nerves entering non-segmented areas lose their regular arrangement.⁵

It will be observed from the table that the position of the ninth and tenth nerves is rather constant, while that of the eleventh varies much, but the eleventh goes to a non-segmented part of the rectus. The twelfth, while it also has no transverse tendon to guide it, has a somewhat regular position, which is due, I think, to its taking a direct course to the pyramidalis muscle, which it supplies.

The practical points are, we can indicate approximately the point at which the nerves emerge from the ribs. The lower four thoracic nerves

can be isolated between this point and the *liniæ semilunaris* by splitting the fibers of the internal oblique, which split will be oblique to the course of the nerves in the lower part of the abdomen, and vertical in the upper part. We can outline the course of these nerves on the surface, and make parallel cuts between them. The nerves to the rectus, with the exception of a few small fibers, enter its posterior surface some distance from the outer border. Upon leaving the costal border, the seventh and eighth nerves turn upward out of the way. The ninth and tenth nerves pierce the internal oblique aponeurosis after having crossed behind the outer border of the rectus. The eleventh generally, and the twelfth always, pierces the internal oblique aponeurosis to enter

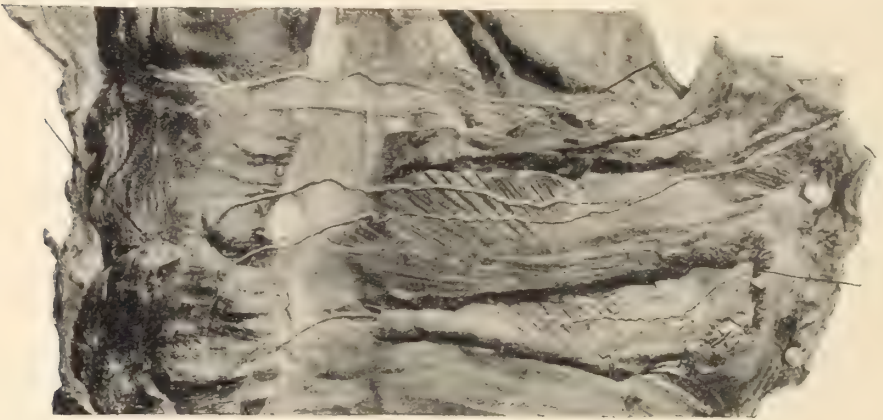


FIG. 2.—A dissection of the abdominal wall from the inner surface. The sheath of the rectus has been removed, as have parts of the transversalis muscle, to expose the tenth, eleventh and twelfth thoracic nerves in this part of their course lying on the deep surface of the internal oblique muscle. The wavy arrangement which allows of their being drawn out is still preserved in the twelfth. The nerves crossing the outer border of the rectus entering its posterior surface are also shown.

the sheath at the outer border of the rectus. Below the twelfth rib the nerve lies in rather loose connective tissue, and is easily found. The hypogastric and inguinal nerves lie out of the way of all but the more vertical lumbar incisions. Not least in importance is the fact that in the contracted abdomen there is sufficient nerve tissue to allow the nerves to be drawn aside after being isolated.

It is not correct to speak of these nerves as stretching. As shown in the twelfth nerve, in figure 2, in which the original arrangement is preserved, the redundant nerves are drawn up into little folds by the elastic connective tissue in which they are imbedded.

Of the various abdominal incisions, the least harmful is that made in the median line, either straight through or continued through the pos-

terior wall of the sheath after the rectus has been drawn outward. It is only when these incisions are inadequate that we have to consider the nerves. Quite as harmless, if we avoid the nerve trunks, for it cuts no muscles, is that made in the *liniæ semilunaris*. Some nerve fibers will

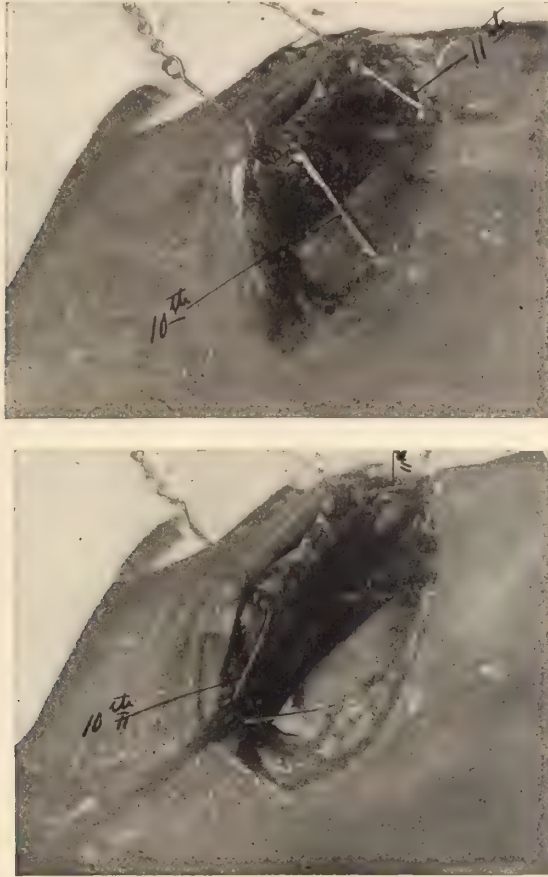


Fig. 3.—A and B, subcostal incision (made in this instance on the left side). A shows tenth and eleventh thoracic nerves crossing the wound, and B shows the nerves drawn aside.

be divided wherever we cut into muscle by any other method than proper splitting, but we can, in most cases, avoid the trunks.

In the sub-costal incision for approaching the gall bladder, which is four inches long parallel to and from one and one-half to two inches below the right costal border, the tenth and eleventh nerve trunks will be severed if the wall is cut straight through. The fibers of the internal oblique run parallel to the cut, so that it can be split, and in this way the nerves may be found and drawn aside. This might not be practical

in the very stout. Even here part of the supply of the external oblique will be cut off, as it comes from the lateral branches. Using our knowledge of the course of the nerve trunks we can approach all obscure epigastric cases through an exploratory incision in the median line, and then, if we find that a complicated gall-stone operation requires more room, a cut can be made from the umbilicus towards the cartilage of the eleventh rib and a flap turned up containing the eighth, ninth and tenth nerves, and more room be gained than by any other incision. If it

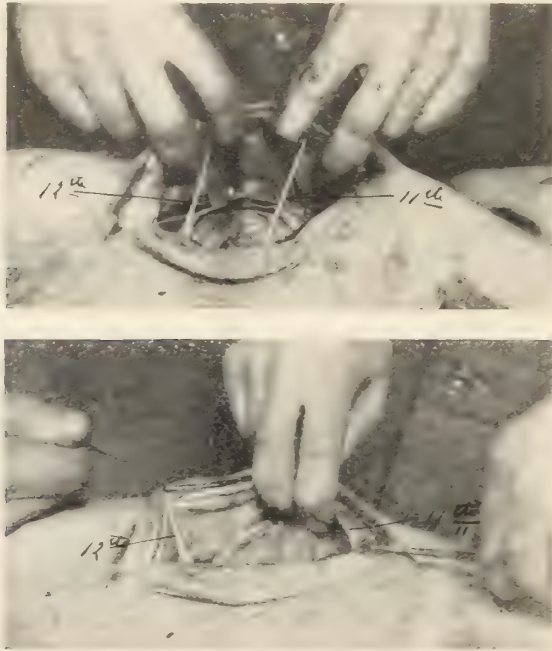


Fig. 4.—A and B, incision through linea semilunaris in lower part. A shows eleventh and twelfth thoracic nerves. B shows nerves drawn aside.

proves to be a gastric case demanding freer access, a supplementary transverse incision may be made between the eighth and ninth or ninth and tenth nerves, preferably the former, which will not cut nerve trunks. Then, if the wound has been kept clean and is well sutured, there need be no fear of hernia.

In the splitting operation, no nerves will be cut if we heed Kocher's admonition, which is to use hooks and tear the muscles apart. Practically the crooked thumbs are efficient.

Kocher's incision for appendicitis, which is three fingers' breadth above and parallel to Poupart's ligament, would most likely be below the twelfth nerve, provided the incision does not extend backwards beyond the anterior iliac spine. The cut for suppurating cases, made one fin-

ger's breadth above the ligament, would in most cases go above the hypogastric nerve.

Figure 1 shows an extensive lumbo-lateral abdominal incision that cuts no nerves. A flap of any size may be raised by cutting from the tip of the last rib to the linea alba between the eleventh and twelfth nerves and then extending the incision in the median line. All of these may be modified so as to divide the rectus transversely.

As we are dealing with a complicated organism, where deviations from the average are not necessarily deviations from the normal, we must always be prepared for a variation, no matter how constant the rule. In isolating nerves this is not of constant embarrassment, for it is only in the exceptional case that we will have to make a second trial. All incisions should be made to allow for some variation, and it is only in through-and-through cuts that the variation can cause trouble. In this connection it should be remembered that the eleventh and, next, the tenth nerves are the most liable to deviation, and that upward.

In all of this I do not wish to be understood as attempting anything radically new. Innumerable men have worked on the same lines; but I hope that the anatomical data herein given will be of some help to those who appreciate the value of conservation of the motor nerves.

BIBLIOGRAPHY.

1. A Statistical Study of the Abdominal and Border Nerves in Man. *Am. Jour. of Anat.*, Vol. I, page 203, 1901.
2. Treves' *Surgical Anatomy*, 1903.
3. Bardeen and Lewis. Develop. of Limbs, Body, Wall and Back of Man. *Am. Jr. of Anatomy*, Vol. I, No. 1, 1901.
4. Mall. Development of Ventral Abd. Wall in Man. *J. of M.*, Vol. XIV, p. 2, 1898.
5. Bardeen. Vide, supra.

CLINICAL REPORT.

THE MANAGEMENT OF A CASE OF PROSTATIC HYPERTROPHY IN AN ENFEEBLED MAN OF ADVANCED OLD AGE.

BY H. McC. JOHNSON, M. D., of St. Louis.

Mr. D. S., aged 86, came under my care at Mullanphy Hospital, May 3, 1905. He was poorly nourished, markedly senile, and continuously asthmatic. Heart sounds were clear and pulse fairly strong. He was confined to the bed most of the time, being able to take only a few steps from the bed to a chair.

About the middle of March of the present year he noticed some burning upon urination, with decided frequency, the frequency existing night and day. At times his efforts at urination were ineffectual. These symptoms increased until about a month later when he had complete retention and became entirely dependent upon the catheter. Catheterization was both difficult and painful, making his condition quite unbearable.

Digital examination per rectum showed the prostate to be bilaterally enlarged. The quantity of the twenty-four-hour urine was fairly good and the specific gravity 1.011. There was a small amount of albumen, considerable pus, and some hyaline and granular casts. Dr. Hemplemann, to whom I referred the case for physical examination, considered the asthma to be dependent upon deficient cardiac action.

Here, then, was a very much enfeebled old man to whom catheter life was a burden; as catheterization required the services of one trained in that line, and because of his family circumstances, it became evident that he would have to spend the rest of his life in the hospital if nothing further could be done for him. Operative measures seemed contraindicated on account of his extremely feeble general state, but he preferred to take the chances in hope of relief.

Following the lead of Smith and Telluride, I did an external perineal urethrotomy under local cocaine anæsthesia and inserted a catheter into the bladder through the opening for drainage. This caused the patient little disturbance and he improved somewhat afterwards, so that we were enabled to have him put in a chair and taken on the porch daily. However, we found difficulty in keeping the catheter in place during the night, because the patient in his sleep would catch hold of it and pull it out. The drainage was done simply as a temporary relief, with the idea that, if the patient improved sufficiently, a complete prostatectomy would be

done later. By June 1st his condition seemed to justify further intervention.

Accordingly, on that day he was given just sufficient chloroform to stupefy him, and a finger was introduced through the perineal wound. In a few minutes both lobes of the prostate were enucleated (there was no median lobe.) It was surprising how little reaction followed this operation. It seemed to have no deleterious affect on his general condition. Two days later the gauze and tube were removed; there was no leakage of urine from the bladder and the patient voided urine voluntarily, quite freely at first, but completely emptying his bladder. The operated wound granulated nicely and the bladder symptoms improved, allowing the patient to return home June 14th, thirteen days after the last operation. There remained a perineal fistula. His asthmatic condition was about the same and his general health seemed improved.

At the present writing the perineal fistula has headed. Frequency of urination is somewhat more than normal, twice at night, but is improving, and as the full benefit from prostatectomy is not reached for at least six months after the operation, I expect still further amelioration of the symptoms.

Preliminary drainage of the bladder through a perineal opening I regard as a decided advantage in cases of old men who are too feeble to stand immediate prostatectomy, and do not do well on the catheter. In fact, the danger of catheter life in prostatitis is no small consideration. A perineal section may be easily and quickly done under local anæsthesia and is followed by a minimum of shock. With a large catheter through the perineal opening in the bladder, drainage is good, and infection and inflammation may be reduced through irrigation, preferably with silver nitrate solution. It gives one time, too, to build up the patient's general condition, and should be employed in emergency cases, at least for temporary relief.

The perineal route is far superior to the supra-pubic route for temporary drainage, because it is efficient, there is less shock, less danger of urinary infiltration, less danger of sepsis. It may be done under local anæsthesia, which is safer than a general anæsthetic.

If the patient builds up and his general condition seems to justify it, a secondary operation may be done. It is not a difficult procedure to introduce the finger through the cut in the perineum and enucleate the obstructing lobes, nor does it add much to the gravity of the situation. In other words, we do half of the operation of prostatectomy at one sitting, subsequently getting the bladder and patient in condition, and the bladder tolerant of manipulation, later doing the second and last part of the operation.

By fitting a urinal to the perineal tube, as recently practised in a case by Dr. Burnett, often a patient may be quickly gotten out of bed and given the benefit of being up and about in the fresh air. If the patient's

condition is too serious to allow of further operative procedure—which is not the rule—we have, at least, relieved him of the pain and difficulty of catheterization, and allowed him to spend the last days of his life in comparative comfort.

It may be said that the Bottini operation is the one of choice for these cases, but the Bottini incision is made necessarily in an infected field without sufficient drainage, and is, to say the least, unsurgical. Moreover, statistics show that not a few serious mishaps follow its use.

On the other hand, the establishment of good drainage from the beginning by perineal section and its lessened dangers, seem to establish it as the operation of choice in these old, enfeebled cases.

EDITORIAL COMMENT.

ABOUT THE FIGHT AGAINST TUBERCULOSIS.

It would mean carrying owls to Athens to insist on the importance of Koch's discovery of the etiologic role of the tubercle bacillus; to-day, even in the lay public, its wide reaching influence is recognized and appreciated. Its consequences in so many directions have changed and built up to a stable structure our conceptions of disease and infection, that it has become the tendency of modern medicine to prevent, rather than to cure, the ravages of the tubercle bacillus, to eliminate the disease altogether, of which it is one of the most essential causative factors. Our ideas and intimate knowledge of the disease have greatly extended, and on this basis all over the world, an enthusiastic battle is waged to-day to master the white plague of the human race. The results of an immense and infinite amount of study are utilized for the means to fulfill the great task that we have undertaken. The individual and general increase of the natural resistance and the prevention of infection are the two great problems that stand in the foreground of all of the modern work. It is too early, as yet, to make conclusive inferences as to the results of this work, yet, as it seems, that the principles are correct, the success so far achieved definitely urges to continue the experiment. One thing, however, has become plain and clear, that is, that if the way is followed the success must be necessarily very slow in coming. As much as the enthusiasm for sanatoria may be justified in individual cases, the enthusiasm for the principle of these institutions is on the wane, as has been predicted by careful observers in the beginning of the movement. Although it would be utterly futile to let this negative conclusion detract from the importance and intrinsic necessity of the task in question that is worked on with so much of the highest self-denegation, we begin to see that the questions so far considered foremost must be attacked also in other ways. The establishment of sanatoria honors humanity, but, practically, they have but little to do with the prevention of the disease, that means with the main problem. All of the references to an educational effect of the stay in such a place, must be taken *cum grano salis*. We know each other and ourselves too well to put our trust in it. The general hygienic and sanitary improvement can naturally advance only in small and halting steps. A general educational raising to a level able to use the means in hand rationally, is, and will be for hundreds of years, a "Castle in Spain." Inroads into the ravages of the disease can be made, but it will, for a long time, remain what it is, our most fearful and victorious enemy. I do not wish to be understood as in the least criticising or belittling the work around and amongst us, but for years it has been a depressing feeling to see that means are left almost unutilized, that with one stroke would cause deep and killing wounds to the disease.

Our knowledge of its pathology is just now discussed on very different bases; it is not uniform yet, and in details, may in the future change greatly. Even the principal questions, the mode of infection and invasion, are answered in opposite directions. Fortunately these questions have only a secondary importance in the great fight that shall make us the preventors of the disease. For this we need only one support, the knowledge of what is the source of infection. And I believe it can to-day be said that the question is settled by Koch's doctrine that only the human tuberculous individual forms this source. Maybe that now and then the bovine bacillus plays a part; it is certainly the rarest exception, and our fight has only to deal with the human bacillus. This is to-day attempted in the well-known ways; to-day when we call a tuberculous patient, tuberculous, only when we have demonstrated that he harbors the bacilli and excretes them. In other words, to-day every tuberculous person is always a disseminator of the disease years before it is recognized. What, then, shall a sanitarium do to decrease the number of infections in people that have been around the patient for years, and that even after the disease is recognized, will be mostly the only ones exposed to the infection? They must be infected by the time of the diagnosis, and further contact means comparatively little to them.

We have learned that a tuberculous infection remains usually latent for many years; one can be inclined to believe that many cases in adults are acquired in childhood. We know, furthermore, that before an open tuberculosis is recognized, the individual usually suffers for a long while from indefinite symptoms; we know, also, that these symptoms are due to an intoxication by the tuberculous toxin. It is true the symptoms are often very indefinite, but the very fact that they cannot be classed with any of the named clinical entities, ought to stimulate close investigations. The great prevalence of tuberculosis ought to arouse a suspicion in every case, and this suspicion can be justified or refuted by definite means. The tuberculin test will, in the future, be the means of salvation. Where a professional man to-day hesitates to make the diagnosis of tuberculosis till the time when tubercle bacilli are found, valuable time is lost. It is a well-established truth that early closed stages of tuberculous infection yield in the majority of cases to proper management. These patients cannot infect others; if they are cured the source of infection vanishes. A change in the teaching on the diagnosis of tuberculosis must be made, not only on the basis of its practical importance, but also on the basis of our pathologic knowledge. The future physician must be able not to wait for the expectoration of the bacilli, but he must send his patient to a sanitarium before they appear. Then, and only then, sanitarium will be a benefit to the human race. The victory in the fight against tuberculosis does not lie, and will not lie, in the reporting of cases, in disinfection, in isolation, etc., but in the ability and the courage of the medical men to call a case one of tuberculosis, that to-day we will carry through years with the diagnosis of malaria, neuralgia, neurasthenia, dyspepsia and what not. The two problems of cure and prevention will be solved this way.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

Micrococcus Meningitidis Cerebrospinalis as a Cause of Endocarditis, and Their Presence in the Nasal Cavities of Healthy and Sick Individuals.—WEICHSELBAUM and GHAN (*Wiener Klinische Wochenschrift*, No. 24, 1905), in a thorough review of the literature find that there have been very few cases in which the micrococcus meningitidis have been found in other organs than the brain and spinal cord. Strictly speaking, outside of the brain and cord they have been found in the nasal secretions only. The authors report here a case of acute endocarditis in a child nine weeks old with meningitis.

The micrococcus meningitidis were the only organisms present in the heart and were undoubtedly the cause of the disturbance. Out of nineteen cases of meningitis in which rhinitis was a complication, organisms were found in eighteen answering in every way the description of the micrococcus meningitidis. The nasal secretions of those who had been together with meningitis cases also contained the organisms. The probabilities are that the disease is transmitted through the nasal secretions.

A Case of Bronchial Colic Resulting from Broncholithiasis.—MUSZCAT (*Buliner Klinische Wochenschrift*, No. 25, 1905) presents the history of a case, characterized by acute pulmonary symptoms, which disappeared upon the expulsion of a calcareous concretion about the size of a pea. The onset of the trouble was acute; there was fever, cough, and bloody expectoration. The symptoms simulated those of tuberculosis, but disappeared promptly upon the expulsion of the calculus. The patient complained of localized "stitches in the side," which the author attributes to the direct irritation of the mucous membrane by the calculus. He reviews in full in this article the factors which may lead to the formation of such calculi.

The Favorable Time for the Appendicitis Operation.—ARUSPERGER (*Deutsche Medicinische Wochenschrift*, No. 23, 1905) recommends operation in acute cases only when there are unfavorable symptoms present; otherwise he awaits the interval, and recommends operation only when a number of typical attacks have occurred, or when the first one has left behind objective or subjective symptoms.

Pathogenesis of Pulmonary Tuberculosis.—MELEMINSKI (*Berliner Klinische Wochenschrift*) presents in this article the results of careful investigations concerning the pathogenesis of tuberculosis, especially with reference to the role played by the lymph system. Guinea pigs were

inoculated with tuberculosis in different parts of the body, and were killed and examined at stated intervals. It was invariably found that the infection proceeded along the lymph system, and not the vascular system. The bronchial lymph nodes were found exceptions to the general rule in that they are a sort of end reservoir, not only for the lymph from the lungs, but from the entire upper portion of the body. Even from the glands of the lower portion of the body the infection found its way to the bronchial lymph nodes. In other words, the bronchial nodes are a sort of heart into which the lymph vessels empty themselves; from these the infection enters the lungs and the circulation.

The Effect of Tobacco in Health and Disease.—(*The Practitioner*, July, 1905), (a) BRUNTON: On the Heart and Circulation.—In animals nicotine causes slowing of the heart with enormous rise of blood pressure. The author believes that there is no drug which will increase the blood pressure as this will. He reviews the physiological effects of the poison and calls attention to the fact that it should never be used in the form of enemata, as was formerly done for causing vascular and general relaxation. Nicotine alone is only taken into the body when tobacco is used by chewing or by snuffing. Fortunately the tobacco used for chewing and snuffing contains, as a rule, but very little nicotine, consequently symptoms of poisoning from either of these habits are rare. Pure nicotine never reaches the mouth in the process of smoking, but pyridine and picoline bases exist in the smoke, and these are of course more or less poisonous. More pyridine is produced in pipe smoking than in cigar, so that tobacco which in the form of a cigar would produce no disagreeable effects may cause giddiness and vomiting if smoked in a pipe. The smoking of cigarettes is more harmful than that of either pipe or cigar because of the fact that the smoke is inhaled into the lungs, and the pulmonary mucous membrane absorbs the poison very rapidly. Smoking in moderation does not seem to be injurious to adults, but is distinctly harmful to youths. Irregularity of the heart is very common in tobacco smokers, and especially in those who use common tobacco. The cardiac rhythm is decidedly disturbed and the pulsations are usually characterized by a pause followed by one or two heavy beats, then a succession of quick and small beats, and then a pause again.

(b) DALTON: On the Gastro-Intestinal Tract.—Smoking increases the salivary secretions, and as result of this, a considerable quantity of saliva is swallowed. There is probably little or no nicotine swallowed with the saliva, consequently gastritis rarely results from smoking. It is not known whether smoking affects the secretions of the gastric juice, bile or pancreatic juice; however, it is generally believed that tobacco diminishes the secretions through its action on the nerves. Cersoy maintains that tobacco paralyzes the vagus, and thus brings about motor insufficiency, and in this manner may produce gastrectasis. Mendlesohn found that 10.6 per cent. of smokers and 10 per cent. of non-smokers fell ill of affections of the digestive organs. Dr. Albut believes that smoking often produces hyperchlorhydria. The author, however, believes that this is due to the saliva that is swallowed and its stimulation of the hydrochloric acid production rather than to any poison that is swallowed. Cases of gastralgia have been described by careful observers who attrib-

uted them entirely to smoking. It is agreed that patients with diarrhea should not smoke, and in all intestinal affections of obscure origin, an inquiry into the habits of the patient as regards tobacco should be made. The popular idea that morning smoking enables men to have regular evacuations of the bowels, the sequence of events is probably the result of habit.

(c) TAYLOR: On the Nervous System.—The effect of tobacco may be summed up as follows: First, tremor, fine and rhythmical in character, inconstant, but if once established the tendency to go on and become more and more definite and persistent. It may be got rid of by leaving off tobacco. Second, giddiness is very common and is probably the result of disturbance of the vagus. Third, vasomotor effects; coldness of the extremities, even to the extent of becoming blue. There is often a pallor of the face and excessive sweating of the forehead. Fourth, sleeplessness is one of the most troublesome effects of tobacco smoking. The author terms it intra-nocturnal insomnia. The sufferer goes to bed and goes to sleep at once, but wakes up later in the night, and lies awake for a long period of time, dropping then into a troubled sleep and awaking tired and unrefreshed.

(d) SPENCER: On the Mouth and Tongue.—The influence of tobacco on the mucous membrane of the mouth and tongue appears clinically as, first, an excoriation; second, a superficial glossitis; third, a chronic glossitis; fourth, a warty or horny patch of heaped-up epidermis with markedly elongated papillæ. The author recommends that, having identified tobacco as the cause of oral irritation, it should be dropped at once.

(e) LACK: On the Upper Air Passages.—Tobacco may affect the upper air passages either directly by acting as an irritant upon the parts with which the smoke comes in contact or indirectly by causing constitutional disturbances. Such authorities as Mackenzie, Lenox, Browne, Morritz, Schmidt lay great stress upon smoking as a causative factor in throat trouble. The author, however, is inclined to believe that this is greatly exaggerated, and that moderate smoking does not cause organic disturbance of the throat. He states that many singers have told him that moderate smoking has never in any way interfered with their singing. He believes, too, that many sore throats are attributed to smoking when other causes are really at fault. He lays down the following propositions: First, cigarette smoking is the most pernicious; Russian and American cigarettes are least harmful; Egyptian and Turkish, most. Second, cigars are the least pernicious form of smoking so far as the throat is concerned, and pipes occupy an intermediate position. Third, other things being equal, the more excessive the smoking, the more the smoke is inhaled, and the younger the patient, the more likely are ill effects to be seen. Fourth, the ill effects of smoking are greatly exaggerated by indulgence in alcohol. Much of the mischief produced by the latter is often erroneously ascribed to tobacco.

(f) LYLE: On the Eyes.—Tobacco affects the eye in two distinct ways. First, dense smoke will cause a catarrhal conjunctivitis in those who suffer from irritable eyes; especially if they are exposed to it in a badly ventilated room. Second, nicotine, slowly and continuously absorbed in the alimentary canal, is liable to produce tobacco amblyopia

or amblyopia nicotinicæ. The author describes the conditions thus produced and the treatment for same in detail.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

Two Cases of Interscapulo-Thoracic Amputation.—BERGER (*Bullet. et Mem. de la Soc. de Chir. de Paris*, April 18, 1905).—The first of these cases had a tremendous round tumor springing from the upper extremity of the humerus, filling out the axilla and causing a radical paralysis by pressure. It proved to be a chondroma which had recurred after six less extensive operations. In spite of the anatomic involvement the author found an interscapulo-thoracic amputation very easy, as he states, though the case is too recent to say anything about the permanent result.

He describes a second somewhat similar case, in which there was a sarcoma originating from the upper epiphyseal line of the humerus, the patient being a young girl. Here there was no shock from operation; the patient was up and out of the hospital on the tenth day, but returned very early with the characteristic neuralgic pains in the chest wall, and soon died of pleural and pulmonary metastases.

The author states that the operation is extremely easy provided the surgeon simply divides the clavicle high up, and ligates the important blood vessels first of all. The procedure would require but a few moments for its execution were it not for the fact that the number of ligatures and sutures, which must necessarily be introduced, consume a great deal of time. (One regrets to notice no reference to nerve blocking in this operation as it has been so successfully carried out by Crile, Cushing and others.)

Intratracheal Struma.—PFEIFFER (*Beit. zur Klin. Chir.*, Bd. 45, Hft. 3).—The author describes his case for the reason that those like it are extremely uncommon. The patient presented herself with symptoms of dyspnea, which became highly apparent on the slightest bodily exertion. Her lungs, etc., were normal, and the laryngoscope examination showed a tumor about the size of a cherry upon the posterior wall of the larynx. At the operation the larynx and trachea were split anteriorly in the median line, and, after the tumor had been removed, were sewn up with the exception of the defect at the lower angle, into which a tracheotomy tube was introduced. No attempt was made to cover up the defect resulting from the removal of the tumor. It was simply left to take care of itself after powdering with iodoform. It did not take long, however, until epithelium had spread over it in a satisfactory manner. The tumor proved to be a mass of thyroid tissue with colloid retention, although the gland itself showed no evidence of change. Only fourteen similar cases have been reported in the whole history of surgery. The explana-

tion for the appearance of this one is that a slender mass of thyroid tissue projected itself around the trachea between the rings, and into the tube beneath the mucous membrane.

Abdominal Perineal Resection of the Cancerous Rectum.—GOULLIQUOUD and FAYSSE (*Revue de Chir.*, No. 6, 1905).—The authors have done this operation eight times, which is certainly enough to give them authority to speak upon the subject. In the first case there was an invaginated tumor which presented exteriorly, in consequence of which the projecting mass was simply amputated. At the second operation the entire rectum was removed by the combined route, with the result that perfect cure was attained. Five years later there is no return of the disease. The first operation allowed the patient to regain health and strength after almost dying of pain and hemorrhage, but was attended by a recurrence, thus necessitating a second procedure.

The third patient was treated at three sittings. First, an artificial anus was made for obstruction, then a combined operation for removal of the rectum was carried out, and later the ovaries were removed for recurrence in them. The patient remained perfectly well when last seen, more than a year later.

The fourth patient was also exposed to three different operative procedures, while the fifth underwent one most exhausting procedure, namely, a total hysterectomy and removal of the rectum by the combined operation at one sitting. In spite of this she recovered completely.

The article contains nothing radically new on the subject, but shows us in a striking manner what extreme procedures we may be justified in adopting while attempting to combat this formidable pathological condition.

Persistent Reflux of Bile After Gastro-Enterostomy.—VON CACKOVIC (*Archiv. Klin. Chir.*, Bd. 76, Hft. 4).—In 160 of these operations the author had 66.6 per cent. free from trouble after the posterior method, but only 38.8 per cent. free after the anterior method, where no entero-enterostomy was done. In six cases he did this latter operation at a second sitting, and in four of them managed to meet the condition, while the other two patients remained unaffected. His experience leads him to think that a widely open pylorus may be responsible for this trouble, and that secondary anastomosis may thus be of no avail unless at the same time we close the pylorus. Hence, he counsels that the pylorus should be very carefully examined, especially at secondary operations, as regards its patency, in order that it may be closed if this be the cause of the trouble. If the pylorus is permanently closed by the pathological condition, the return of bile into the stomach can always be effectually made by an entero-anastomosis. One is surprised to note that the author makes no mention of the posterior gastro-enterostomy without a loop, which is now universally acknowledged to be the operation of choice.

The Treatment of Burns and Skin Grafting.—SNEVE (*Journal American Medical Association*, July 1, 1905).—This most excellent article is

the result of following the common-sense plan of treating burns and skin grafts without a dressing of any kind, simply allowing the air to get to the injured surfaces, and open all retention blebs, etc. The room in which such a patient is kept after extensive burns should remain at a temperature of about 60°. Morphine is used to control the pain; strychnine and saline are the aids used in combating the shock and depression. A surprisingly good per cent. of results has been accomplished in the large number of cases treated, and the future mortality of this form of injury will, no doubt, be influenced by the author's article. Baths are not the best treatment for this condition, for the reason that they interfere with the perspiration and dressings of whatever sort, simply retain the toxic materials and allow resorption.

Regarding Sarcoma of the Malar Bone and Orbit Treated by Radiotherapy.—WALTHER (*Bullet. et Mem. de la Soc. de Chic. de Paris*, April 18, 1905).—An enormous tumor had recurred after two operations, and then disappeared completely after the application of the x-ray, as unusual as this may seem. At the fundus of the orbit the last bit of resisting tissue had been noted, but this had now become a firm, healthy-looking scar. The disfigurement was remarkably slight, considering the extent of the lesion, and this case, which has the authenticity of having been presented before the Paris Surgical Society, will certainly do something toward strengthening our hopes of the x-ray treatment of malignant growths.

DIAGNOSIS.

IN CHARGE OF

A. E. TAUSSIG, M. D.

Contribution to the Study of Urinary and Biliary Concretions.—FANTINO (*Arch. f. Klin. Chic.*, vol. 75, No. 2).—An examination of the behavior of various concretions, as well as of the pure salts constituting them, towards the x-rays, has given some interesting results. The oxalates, it seems, always throw an intense shadow, the urates on the other hand, a very faint one. The phosphates behave differently, according to the bases with which they are combined. Calcium phosphate throws a dark shadow, ammonium and magnesium phosphates a faint one. This explains the diverse results obtained by other authors in regard to the diagnosis of phosphatic calculi by means of the x-rays. Fantino considers the results of an x-ray examination for stone in the bladder as absolutely decisive, whereas in renal calculus, a negative result should be utilized with caution. In this last he is opposed to the views of Albers-Schoenberg, Rumpel, and others.

His experiments with the photography of gall-stones by means of x-rays, have shown that most of them throw fainter shadows than pieces of muscle or of liver, but that stones, such as are found occasionally, that are rich in lime salts, throw a heavier shadow. It is such stones that,

under favorable circumstances, may be demonstrated by means of a xylophotography in the gall-bladder of the living patient.

The Diagnostic Significance of Hematemesis in Appendicitis.—K. S. (Deutsch. Arch. f. klin. Med., 1905, No. 4).—In cases of severe peritoneal infection, there sometimes occur gastric hemorrhages and hematemesis, even in the absence of any primary gastric disease. There does not need to be any general sepsis, although the little defects in the gastric mucosa that are responsible for the bleeding are usually due to the absorption of septic material. The writer reports a case that began with symptoms of appendicitis, but in which the bloody vomit led to a diagnosis of gastric ulcer. Under an expectant treatment, the appendix became perforated and a subphrenic abscess resulted, to which the patient succumbed. At the autopsy the stomach was carefully examined. The mucosa showed multiple hemorrhages *per digestas*, ordinary hemorrhagic erosions and fresh miliary inflammatory areas with necrosis of the mucosa. Evidently the septic toxins, circulating in the blood, produced tiny necrotic areas in the gastric mucosa. These were enlarged as a result of the digesting power of the gastric juice and led to the bleeding. Such a complication may make the differential diagnosis between perforating gastric ulcer and appendicitis very difficult. The writer of this abstract has himself seen three similar cases, in one of which the diagnosis of gastric cancer was wrongly made.

Subjective "Injection-fever" in Phthisis.—F. KOLLER and M. HILKE (Deutsch. Arch. f. klin. Med., 1905, No. 4).—The writers have found that the injection of distilled water, or, indeed, merely the insertion of a hypodermic needle, may produce a fever in a consumptive patient closely resembling that of a typical tuberculin reaction. The subjective symptoms (weakness, depression, headache and the like) may also be present. Such a pseudo-reaction has been observed, not only in hysterical patients but in consumptives without any marked psychical abnormality. This would seem, then, to add one more to the sources of error inherent in the tuberculin test. It might be well either to precede the real tuberculin injection by one of distilled water to see whether the latter alone will cause a rise in temperature; or, at least, the patient should be left in ignorance of the results expected from the tuberculin injection.

A New Test for Acetone in the Urine.—CONSTANTIN COLLO (Histo-Farmaceuti, 1905, No. 2; Münch. med. Woch., 1905, No. 14).—This new test is based upon the property of acetone of being converted into acetic acid by means of oxidation. If the urine contains only small quantities of acetone, it is necessary to add a few drops of dilute sulphuric acid and to distill. In this case, the distillate is used for the test. If larger amounts of acetone are present the urine itself may be used. The procedure is as follows: To five c. c. of urine, or of the distillate, add two or three drops 5 per cent. ferrous sulphate solution, five drops dilute sulphuric acid, a few c. c. hydrogen peroxide. Warm gently. Then add fifteen to twenty drops concentrated sulphuric acid and heat again. The acetic acid formed by the oxidation of the acetone unites, in the presence

of sulphuric acid, with the alcohol to form ethyl-acetate (acetic ether), which may be recognized by its characteristic odor.

The test is said to be very delicate and will detect the presence of small quantities of acetone. It may be utilized, for quantitative determinations and experiments towards the elaboration of such a procedure are now under way.

The tests for acetone now in general use are reliable only if the distillate of the urine is used. If the above reaction is really trustworthy if applied to the urine itself, it represents a valuable addition to our urinological technique.

Albuminuria Resulting from Palpation of the Kidneys.—J. SCHREIBER (*Abstr. in Muench. med. Wochenschr.*, 1905, No. 15).—Of forty-two cases of nephroptosis, examined by the writer, palpation of the kidney produced albuminuria in thirty-nine. In one case albuminuria was absent; in the two others the result was indecisive. The amount of albumin varied from a faint trace to three-tenths per cent. Microscopically renal epithelium as well as red and white corpuscles were found, but never casts. The cause of this palpatory albuminuria may be the direct expression of blood or lymph from the capillaries or lymph spaces, or a pull on the larger renal vessels. Contractions of the abdominal muscles may make this palpation difficult or impossible, but pressure on no more than one pole of the kidney suffices to produce the albuminuria. The duration of the albuminuria varies from several minutes to several hours; if it lasts for a day or more, it is due to renal disease. As the writer has shown in seven cases, this palpatory albuminuria may be utilized to determine whether a suspicious tumor is the kidney or not. It thus forms a useful addition to our methods of abdominal diagnosis.

Diphtheria and Tetanus.—L. BOBONNEIX (*Rev. Mens. des Mal. de l'Enfance*, 1905, No. 1).—The writer shows that diphtheria may occasionally produce a symptom-complex identical with that of true tetanus. Whenever, therefore, the etiology of tetanus is obscure, a search for a possible diphtheritic infection should be made. In tetanus neonatorum especially, the secretions of the navel, the conjunctiva and the buccal cavity should be examined microscopically and culturally for the diphtheria bacillus. If it is found, the injection of diphtheria antitoxin, and it alone, may save the patient's life.

The Chemical Test for Pus in the Urine.—B. GOLDBERG (*Zentralbl. f. inn. Med.*, 1905, No. 20).—Donne's test for pus in the urine consists in the formation of a gelatinous mass upon the addition of potassium hydrate. A useful modification is the following: Liquor potassæ is added to the urine drop by drop, shaking vigorously after each addition. The viscous mass that results, imprisons the air-bubbles so that they remain suspended in the urine for some time. Two precautions must be taken. The reagent must be added cautiously, since an excess of it redissolves the pus, and the urine must be shaken immediately after adding the reagent since the viscosity gradually disappears. The writer has tested this reaction, which was first described by Mueller, in fifty cases. He finds that a positive reaction always proves the presence of pus and a

negative one its absence, if the urine be acid. In alkaline urine, however, the reaction may be negative even though pus be present. The test is useful chiefly when a microscope is not at hand.

Percussion of Pulmonary Cavities.—H. ERNI (*Zeitschr. f. Tuberc. u. Heilst.*, 1905, vol. 7, No. 2).—If the chest wall above a tuberculous cavity be vigorously percussed by means of a percussion hammer, cough and expectoration follow each beat. The patient suffers no pain, but feels as though something were loosened in his chest. The writer uses this procedure not only for diagnostic but for therapeutic purposes. He believes that a cleansing of the cavity results, that is often useful.

THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

Treatment of Diabetes Mellitus.—NAUNYN (*Deutsch. med. Wochenschr.*, 1905, June 22, p. 977) in a clinical lecture presents in an admirable way the principles which govern the treatment of diabetes mellitus. The object of treatment should be to increase what "tolerance" for sugar a diabetic patient may have. A patient's "tolerance" for sugar is the quantity that he is able to assimilate and is represented by the difference between the quantity of carbohydrate ingested and the quantity of sugar excreted in the urine. Such a determination presupposes a careful weighing of the carbohydrates taken in the food. The degree of tolerance should be determined in every case; without it no clear conception of the case can be reached. The problem in treatment is not only to find the quantity of carbohydrate which the patient can take in his food without causing sugar to appear in the urine, but by avoiding an overtaxing of his power of carbohydrate assimilation to gradually increase this until he can assimilate a quantity of carbohydrate which will approach as nearly as possible the normal required by the body.

The diet, for the details of which the reader is referred to the article itself, should contain a sufficient caloric value (2,500 calories for an individual weighing 130 to 140 pounds), but under no circumstances should be excessive, as too generous a diet is fully as deleterious as undue quantities of carbohydrate. The carbohydrates should then be reduced from day to day until no sugar appears in the urine, the caloric value thus lost being replaced by an equivalent in fats; *the proteids should not be increased* beyond the quantity necessary for normal individuals of the same weight. In cases in which the tolerance is low, the attempt to make the urine sugar-free may be materially aided by a day of absolute abstinence from carbohydrates. When a satisfactory diet has been reached, it should be continued for at least two weeks. The carbohydrates may then be very gradually increased by adding 50 grams of milk daily, the twenty-four-hour urine being examined after each addition in order to determine the earliest appearance of sugar. If

500 grams of milk can be taken daily without causing a glycosuria, an attempt may be made to substitute bread in the proportion of 20 grams for 300 grams of milk. Further increase is made by addition of milk as before with substitution of bread when a sufficient additional quantity of milk is taken—until the limit of tolerance is reached. Such a course of treatment requires about two months. In this period the patient should gain in weight, lose the symptoms of the disease, and be improved both objectively and subjectively.

This procedure Naunyn regards as the actual treatment of the disease. The subsequent control of the diet in such a manner that the carbohydrate limit, as determined, is not overstepped he designates as "Pflege." The limit once determined, any form of carbohydrate, in equivalent quantities, agreeable to the patient and which will serve to retain or stimulate the appetite, may be substituted for milk and bread. The urine should be examined at first at intervals of a week, then once a month, and any quantity of sugar above 0.5 per cent. should lead to a reduction of carbohydrates, or even to a repetition of the active treatment. Complete abstinence from carbohydrates for twenty-four hours may cause the urine to remain free from sugar even after resumption of the previous quantity of carbohydrates, and Naunyn regards such a fast-day, taken at intervals of a week, especially useful in cases in which the general nutrition of the patient requires the daily quantity of carbohydrate to approach very nearly the patient's limit of tolerance.

The Circumstances and Treatment of Bright's Disease.—(CROFTAN (*Jour. Med. Assoc.*, June 24, 1905, p. 1979), expresses the modern conception of Bright's disease as high arterial tension, with consequent cardio-vascular changes which result in nutritional disorders, particularly of those tissues of the body which are supplied by end arteries, namely, the retina, the brain and the kidneys. The cause of this high arterial tension is probably circulating toxins, which may arise either from faulty "degradation" of proteid food in the intestines, which floods the liver with more toxic material than it can dispose of, so that it lets some escape, or faulty metabolism in the tissues themselves give rise to similar toxins. The latter may be the result of the former in that a persistent overtaxing of the liver cells may eventually cause an incomplete oxidation of intermediary products of metabolism (purin bases, etc.), which they ordinarily convert into innocuous substances.

Regarding Bright's disease, therefore, as a toxæmia, causal treatment may be directed, at least in one group of cases, toward digestive disturbances of any sort, and toward the stimulation of the liver cells to destroy poisons which reach them from the intestinal tract. The remedies which effect these ends are certain metallic salts, the bile acids and certain organic peroxides. These are employed to control bacterial decomposition in the intestines within limits and to stimulate the activity of the liver cells. Croftan takes as his index of excessive decomposition the presence of sulphuretted hydrogen in the fæces, and of the aromatic sulphates (with the indican reaction as their indicator), in the urine. As an indicator of sulphuretted hydrogen in the fæces, he uses bismuth subnitrate, which precipitates as the sulphide and slackens the fæces, and for this purpose should be given in daily doses of 20 grains.

For controlling bacterial decomposition Croftan has made much use of the sulphocarbolate of zinc given in $\frac{1}{2}$ grain doses with 1 grain of sodium of glycocholate at frequent intervals until the urine fails to give the indican reaction and the faeces resume their normal color in spite of the presence of bismuth. The proper dose of the antiseptic mixture should be the least quantity which will prevent the blackening of the faeces. In addition to medication of this sort, a careful diet should be selected with special regard to the proteid foods, the most rapidly assimilable being preferable.

The Treatment of Tetanus by Intraneural and Intraspinal Injections of Antitoxin.—ROGERS (*Jour. Am. Med. Assoc.*, 1905, July 1, p. 12), presents a careful consideration of the experimental work of Meyer and Ransom, which demonstrated that tetanus toxin reaches the spinal cord solely through the motor nerves which it enters through its nerve endings, and further notes the experimental proof that tetanus antitoxin never reaches the nerve cells of the spinal cord when injected subcutaneously or intravenously, and only very gradually when injected intravenously. The points at which Rogers contends the toxin should be attacked are, first, in the general circulation and in the tissues; second, in the motor nerves, and third, in the spinal cord itself.

In early cases in which bacilli have been demonstrated but which have made no symptoms, daily subcutaneous injection of antitoxin continued for at least two weeks, associated, of course, with proper local treatment, may suffice to prevent any further development. After symptoms have developed it is waste of precious time to inject antitoxin subcutaneously. It should then be given intravenously in generous doses in order to neutralize the toxin still in the circulation, thus disposing of further absorption of toxin by the nerve endings. For intravenously injecting the median basilic vein may be used. The next step is the intraneural injection of antitoxin. The chief motor nerve trunks which supply the region in which the injection has occurred should be exposed as near the spinal cord as practicable, and each injected by a fine hypodermic needle with from 5 to 20 minims of antitoxin. This neutralizes the toxin contained in the nerve below the site of injection, and may leave a surplus to combat the toxin higher up in the nerve or in the spinal cord. The incisions made to expose the nerve trunks should be left open, so that from day to day additional injections may, if necessary, be made. In order to neutralize the toxin which has reached the cord before the respiratory centers become involved, lumbar puncture may be made, when it is necessary, however, to injure the cauda equina to provide a site of entrance for the antitoxin, as this is not absorbed in the smallest degree by the spinal cord when simply injected into the cerebrospinal fluid. From 10 to 20 c.c. of antitoxin should be then introduced into and about the injured nerves. When the respiratory center has already been involved, and respiration has become embarrassed, Rogers has, as a last resort and fully appreciating the danger of hemorrhage, "introduced a long hypodermic needle near the posterior median line posteriorly opposite the sixth or seventh cervical spine and passed through the spinal canal until the body of the vertebra is encountered." Through a needle so introduced 20 to 30 minims of antitoxin are in-

jected directly into the end. In spite of a priori objections, Rogers has had no unfavorable experiences, and has seen recovery from apparently hopeless intoxications.

The treatment of the point of infection should be taken up last in order to avoid possible neuclipt infection. Where in the extremities much laceration of tissue has occurred amputation should receive more consideration than has heretofore been granted it. For less extensive injury the most painstaking cleansing should be followed by an attempt at disinfecti, preferably by tincture of iodine 1.1000, or even 1.500. The toxin which is thrown out into the neighboring tissues should be neutralized by a number of small subcutanery injections of antitoxin into the region.

When made necessary by the persistence of symptoms, the whole series of injections, intravenous, intraneural, intraspinous, and subcutaneous should be repeated daily.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

About Physiologic Degeneration in *Actinosphaerium Eichhorni*, with Remarks on the Etiology of Tumors.—R. HERTWIG (Festschrift f. E. Haeckel, Jena, Fischer, 1904.)—The cytologic study of *Actinosphaerium* carried on by Hertwig for many years, has resulted in the establishment of new ideas about the structure of protozoic cells that have not failed also to affect the conceptions entertained so far, about certain nuclear and cytoplasmic configurations of the metazoan cell. While for the protozoan body today the existence of two nuclear substances, one serving the nutritive, the other the propagative functions, is a generally accepted fact, doubts have begun to arise as to the assumed function of the metazoan cell nucleus. The chromidian apparatus in protozoa has been looked for in metazoa, and Goldschmidt has described in certain actively functioning tissue cells, analogous formations. In *actinosphaerium* Hertwig has demonstrated that the growth of the nucleus takes place at the expense of the protoplasm, and that for the intactness of life the functional growth of the nucleus must be compensated by resorptive processes. If by any cause this equilibrium is disturbed, the nucleus begins to grow, and leads to an enormous hypertrophy. Hertwig produced such a disturbance by overfeeding, and found that this hypertrophy led to degenerative processes, finally resulting in the total destruction of the nucleus. The modus of this nuclear destruction or dissolution varies greatly, and leads to phenomena absolutely identical with structures so far only found and described in different protozoic organisms as specific structures. On the other side they lead to formations of hyperplasia, hypertrophy and hyperchromatosis absolutely homologous to the changes observed in the cells of malignant new formations. Hertwig concludes that the cells of a carcinoma undergo in a similar way, a

physiologic degeneration on account of the constant excess of nutritive material at their command. Like the protozoa, tumor cells are able to utilize this continuous surplus, and thus differ from normal tissue cells, whose growth and nutrition is checked by the needs of the organism as a whole. The cells of a new formation, therefore, do not grow organotypically, but cytotypically; they are emancipated from the functional work of the whole. This return to the cytotypic growth, Hertwig considers as a result of a change of the character of the cell, caused by innate quality or other influences, or by both factors. As to external influences, overfeeding and continuous inflammatory stimulations certainly are important. Of the inflammatory stimuli we know that they act on tissue cells often in a way to decrease differentiation and to stimulate cytotypic growth. Hertwig considers the hypothesis of Cohnheim, of the embryonal "anlage" of tumors as untenable. He emphasizes that embryonal cells are cells with cytotypic growth, but at the same time cells that, with increasing proliferation, assume the tendency to organotypia. He maintains that they are endowed with the property of differentiation, while tumor cells in the course of their proliferation lose the slight degree of this capacity that they possess in the beginning. Hertwig excludes the possibility that embryonal cells should leave unutilized for years their chance of nutrition while they have the chance to grow cytotypically to tumor cells. As a proof for the correctness of this view, he cites the tumor metastases that are able to grow everywhere. In addition, the author declines to consider the parasitic theory. The work of Hertwig, that in addition to the demonstration of a double functional nature of the nuclear substances, in general, has shown that under certain conditions this difference can morphologically become apparent, and lead a determining role in the developmental cycle of an organism (like in many protozoa) is important, because the physiologic nuclear degeneration described by him, has for the first time made possible to attack the problem of cell inclusions, etc., by a comparison with processes well studied and occurring under normal conditions. This important consequence has already been recognized by several observers, (Ewing, Prowaczek), and it is not unlikely that cytologic study will soon class such inclusions, or some of them, under the head of chromidial substances. That the study of normal cells under certain conditions will give the clue to this explanation is made very possible by the above mentioned observations of Goldschmidt. Whether Hertwig's application of the phenomena observed by him to the tumor etiology will be found to be justifiable, is very doubtful in view of the daily increasing accumulation of material, speaking for the embryonal origin. Positively, we at least refer to the *late development* of many teratonta and embryomatous growths that absolutely contradict at least the generalization of Hertwig's view. With these and with Wilm's beautiful researches, today, at least, the balance of evidence, if evidence we can call it, is against Hertwig.

Remarks on the Staining of Spirochaete Pallida.—G. GIEMSA (*Deutsch. Med. Woch.*, 1905, No. 26).—This article was picked out for review from the rapidly accumulating literature on Schandinn's spirochaete because it settles at least one point of the question—that of a reliable and certain method of demonstrating the microbe by any one who wants to un-

dertake the task to search for it. Giemsa's concise directions reduce the difficulties to a question of time and patience. On account of the importance of the subject, the directions may be shortly given: 1. Hardening of the dry, thin film for fifteen or twenty minutes in ethyl-alcohol, blotting with filter paper. 2. Dilution of one drop of Giemsa's solution (Gruebler) in 1 cc. of distilled water. 3. Staining in this solution for ten or fifteen minutes. 4. Thorough washing in distilled water. 5. Blotting, drying at room temperature, balsam. The method is, of course, the classic azure-eosin method, long known and appreciated. The formula for the solution has been published, and is well known. It is advisable, however, to order it from Gruebler, as otherwise the same uncertainty is likely as that experienced in making Leishmann's solutions. The number of observations published since we last mentioned the subject in this journal is great. They are, all of them, confirmatory of Schaudinn's report. The spirochaete has been found not only in primary and secondary lesions, but also in glands, in the organs of cases of congenital syphilis; in one case it was reported that it was found in the blood. Metchnikoff and Roux have found it in primary and secondary affects of monkeys inoculated with virus from human lesions. It is even claimed that it is possible to demonstrate them in fixed and stained sections of tissue. There is absolutely no doubt that the spirochaeta pallida will be in the near future established as constantly present in syphilitic lesions in the primary and secondary stages of the disease. The question of etiology is for the present not to be considered from the point of view of exact scientific experimental methods. The cultivation of spirochaetes has so far been impossible; may be that the discovery of Novy of trypanosoma cultivation will bring fruit in the study of this protozoon. It is at the present too early to make positive statements, although one may secretly agree with Fraenkel of Halle, who unhesitatingly pronounces the etiologic relation of the spirochaete to syphilis. The fact that in spite of innumerable attempts to find specific microbes in syphilitic products, the spirochaete has never been found, explains itself by their minuteness in size and by their refractivity to the ordinary staining methods. There is evidence in the literature that it has been seen before, but this evidence is not conclusive, for the reason that other spirochaetæ of saprophytic character occur in the same lesions, which, at the time those older observations were made, could not be differentiated from the sp. pallida. It will take a long time before evidence sufficient in weight will be collected to prove the etiologic role of the microbe. Perhaps it will always be only circumstantial evidence, not complying with the demands of the rigorous and definite rules pronounced by Koch. Of course, this is the restriction that the methods of scientific research must unwaveringly recognize as just. Still, we have found that conclusions per analogiam have often led to truth, as we take it. And this much must be said, that in recalling former experiences in related questions, the work so far done on the spirochaete found in syphilis, bids fair to justify such a conclusion also. It must not be forgotten that spirochaetæ are no bacteria, but protozoa, with a very complicated cycle of development, that, for one of them, at least, has been worked out.

After these remarks were written, a publication by Kiölemenoglou and Cube (*Munch. Med. Woch.*, 1905, No. 27.) appeared, in which the au-

thors claim to have found the *sp. pallida*, besides in syphilitic lesions, also in the secretions of balanitis, in a gonorrhœic abscess of the Bartholinian gland, in pus of serofulodermaic abscesses, in the products of a disintegrating carcinoma and in acute condylomata. In all cases they found with Schaudinn's organism the spirochaete refringens, and believe that the former are only stages or degenerative forms of the latter. Whether this is true, or is to be explained by faulty methods, further control-investigations will have to show. In view of Schaudinn's authoritative knowledge on spirochaetæ, the latter result appears most probable.

Hoffman (*Berl. kl. Woch.*, 1905, No. 28,) himself, the collaborator of Schaudinn, reports just at the same time that he has found in ulcerating carcinomata, spirochaete closely resembling the *pallida*. He insists that this has no bearing on the etiologic role of the latter, and expresses the hope that soon the study of the development of the organism and its cultivation will furnish further means of differentiation.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

The Treatment of Menorrhagia and Hemoptysis by Inhalation of Amyl Nitrite.—H. COLMAN (*Scott. Med. Jl.*, May, 1905; rev. *Jl. of Ob.*, Brit. Emp., June, 1905).—In the *Lancet* of 1904 (Vol. II, p. 522), Hare advocated the use of amyl nitrite to check hemoptysis. He noticed in one of his patients that menstruation was also checked completely on many occasions when inhaling nitrite of amyl for angina pectoris.

Dr. Colman now reports a case of very severe menorrhagia in a woman of fifty-six, whose uterus has been examined for disease, with the result that only thickened endometrium was found. Curetting, large doses of ergot and rest failed to ensue any real benefit. The writer then directed the patient to go to bed when menstruation came on, and when it was excessive to inhale three minims of amyl nitrite. The loss was at once checked and stopped in twelve hours. Treatment has been discontinued for five months up to the present day, with the result that there is a marked improvement in the general health, the anemia has gone and the menstrual flow is diminishing.

Some Peculiarities of Appendicitis in the Female.—G. HEATON (*Brit. Med. Jour.*, 1905, No. 15).—Appendicitis is observed in women only half as often as in men, probably on account of a better vascularisation of the female appendix. Pregnancy does not dispose to the development of an appendicitis, leads, however, quite frequently to an acute exacerbation of a chronic process. An acute attack always means a grave complication of pregnancy. Premature expulsion of the fetus is the rule if an abscess forms. Where the uterus constitutes a portion of the abscess

wall, rupture of the abscess and a general peritonitis are common accidents when the uterus contracts after the delivery. Of twenty-four patients in whom an appendicitis appeared during pregnancy, all those without abscess formation (six) recovered. Of the eighteen suppurative cases nine died. In 78 per cent. of the cases the pregnancy terminated prematurely. Chronic appendicitis is easily mistaken for an affection of tube or ovary, especially because a chronic appendicitis very often shows an aggravation of pain at the time of menstruation.

Decidua Cells in the Cervix in Cases of Normal Pregnancy.—M. BLUMBERG (*Arch. f. Gyn.*, Vol. 75).—Up to a few years ago it was the general belief that the faculty of forming a decidua is confined to the mucosa of the uterine body. Today the fact is established beyond doubt that the cervical mucosa may also undergo the typical decidual changes. Blumberg describes two cases of this kind. In one case characteristic decidual cells were found on a cervical polyp which was removed during pregnancy, in the other case a decidual transformation of the mucosa was seen on an eroded portion of the posterior lip of the cervix. From an analysis of all the reports in literature of similar cases the writer draws the conclusion that decidual changes in the cervix seem more common in cases of a low insertion of the placenta and could possibly prove of value in the early diagnosis of a placenta previa.

Can the Bossi Method be Recommended to the General Practitioner?—DUEHRSEN (*Arch. f. Gyn.*, Vol. 75).—The question is answered, as several times before, in the negative. Once more the writer takes up this much discussed problem and tries to prove that the use of the Bossi dilator is superfluous after the obliteration of the cervical canal, and is a decidedly dangerous procedure before its obliteration. The Bossi dilator can be applied without undue danger only by the specialist. Therefore, in the author's opinion, the vaginal Cæsar section remains the preferable procedure, while the general practitioner must be encouraged to use the colpeurynter.

Existence of a Nervous Reticulum in the Villi of the Placenta.—FOSSATI (*Annali di Ostet. e Gin.*; rev. *Am. Jour. of Obst.*, July, 1905).—By the staining method of Golgi, the writer has demonstrated in the placental villi what appears to be a fine, nervous reticulum, rich in branches, which occupies the central and peripheral portions of the villi, excluding only the superficial portion. It is formed of filaments of various diameters, with well-defined margins and having at certain portions swellings, from which begin secondary fibers. The method of arrangement and of ramification of the fibers along the vessels, the terminations similar to those in other organs, the swellings and the penetration of the epithelial layer by some of the fibers, show that this is a true nervous reticulum. The importance of this knowledge with regard to the origin of the epithelial layer, as well as in itself, is very great. The origin of this reticulum is not yet demonstrated.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

Ports of Entry of Tuberculosis in Childhood.—PIETTRE (*These de Paris*, 1905, *Rev. Mens. des Mal. de l'Enf.*) says that infection in all cases occurs either through the skin, the digestive tract or the respiratory tract.

Infection through the skin is excessively rare, especially in the child. Furthermore, infection of this kind is always limited to a purely local lesion, either a lupus or an anatomical tubercle.

Infection through the gastro-intestinal tract, and more particularly through tuberculous milk, certainly does occur; but with the universal boiling of milk before consumption, contagion through tuberculous milk plays a role that is practically negligible in the pathogenesis of infantile tuberculosis. (It will be remembered that in France the practice of *sterilizing* milk is almost universal—ED.)

Tubercular infection occurs most often through the respiratory tract. That this is true is shown by observation, by experimentation and bacteriologic research, and by studies in pathological anatomy (finding of primary tracheo-bronchial adenopathy at autopsy). Tuberculosis is, above all else, an inhalation disease. Direct family contagion is, of course, an important factor in infantile tuberculosis. Clinical facts prove that the direct surroundings (parents, relatives, nurses, domestics and other persons about the house) form a milieu so favorable to the development of tuberculosis, that it is difficult to see how the children can escape.

Intestinal Tuberculosis in the Nursling.—DUDREUIL (*These de Paris*, 1905, *Rev. Mens. des Mal. de l'Enf.*) finds that intestinal tuberculosis, while not as frequent as inhalation tuberculosis, is still very common. There can be no doubt that in certain cases tubercle bacilli may penetrate through a healthy intestinal mucosa without injuring it. Consequently, it is not rare to find the mesenteric glands more or less tubercular without intestinal ulceration. Secondary intestinal tuberculosis from direct ingestion of tubercular sputum is more rare than in the adult, because the swallowing of the sputum is rarer. (This latter statement is directly at variance with the generally accepted view. Infants and young children do not expectorate, and *do*, as a rule, swallow the sputum.—ED.) It is, however, certain that ulcerative pulmonary tuberculosis is far more common in infancy than has previously been supposed.

Primary intestinal tuberculosis is contracted through the drinking of milk containing live tubercle bacilli; most often by the swallowing of tubercle bacilli-laden particles of dust, particularly through the use of unclean nipples and nursing bottles.

The bacillary infection is favored by pre-existing gastro-intestinal lesions, and the existence of a gastro-enteritis may thus be considered a predisposing cause. The normal avenues of absorption and the permea-

bility of the intestinal mucosa, permit the bacilli to penetrate the intestinal wall. The mesenteric glands are thus attacked, and the lesion may remain here, latent, for a greater or less period of time, before the infection develops manifestly. Heredity is, however, evidently a predisposing factor.

Diagnostic Tuberculin Reaction in Childhood.—SCHICK (*Jahrbuch f. Kinderheilk.*, June, 1905) has collected and analyzed 120 cases from the children's clinic in Graz. In many cases the reaction does not differ in childhood from the characteristics as seen in adult life. There are, however, two points worthy of special note in many cases in childhood: (1) The so-called protracted reaction, where the rise of temperature persists for several days, is much more common at this time of life. (2) In many cases there is an intense local reaction at the site of injection, usually the forearm (Stichreaction of Escherich). In the severest cases this local reaction consists in intense edematous swelling and erysipela-tous redness of the entire arm, with great tenderness.

Both of these characteristics are dependent upon the degree and time of onset of the specific infection in the child. The reaction occurs the more promptly and the more intensely, the nearer the time of original infection the injection is made.

So far as the local reaction is concerned, it is to be remembered that skin tuberculides are much more common in childhood than in later life. According to the author, there is no case on record where, tuberculosis being absolutely excluded, there occurred a characteristic local reaction. In undoubted cases of tuberculosis this local reaction is at times the only sign of positive reaction. In the course of therapeutic immunization with tuberculin, it not infrequently happened that the local reaction persisted after the fever had altogether disappeared. There is, however, no definite relation between the intensity of the general reaction and the local reaction. Using the same quantity of tuberculin, it was found that the general reaction was the more violent and intense, the shorter the elapsed time from the period of original infection, or latest exacerbation.

It is, of course, to be noted that a positive reaction merely shows that the patient either is actively tuberculous, or that a tubercular focus exists. Whether or not the particular disease from which the patient is suffering at the time of injection is tubercular, can at times only be decided by careful consideration of all the manifestations. It can, of course, happen that the reactivity depends upon an old focus which is not to be brought into relation with the disease in question. This difficulty obtains with less frequency in infancy and early childhood than in later life, when tuberculosis is, of course, more common, particularly with reference to old, healed foci. This fact, however, lends added importance to the tuberculin test in childhood.

The old tuberculin was used. The initial dose should never exceed one milligram, and for very young children, even this is often too large a dose.

A detailed discussion of the cases is included in the article.

ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

Axillary Abduction in the Treatment of Congenital Dislocation of the Hip.—ROBERT WERNDOFF, Vienna (*Zeit. f. Orth. Chir.*, Bd. 13, Hft. 4.)—The writer uses this axillary abduction on cases that have been reduced at least once or twice and have relapsed in spite of the prolonged fixation in the right-angle position. The treatment consists of putting the thigh close to the trunk in the most extreme abduction, the knee coming under the axilla. The thigh and trunk are encased in one plaster of paris jacket. He has used this treatment in eight cases, four of which are still under treatment, and in the other four stability of the joint was established.

The Diagnosis and Treatment of Fracture of the Carpal Scaphoid and Dislocation of the Semilunar Bone (With Report of Thirty Cases.)—E. A. CODMAN, M. D., Boston, and H. M. CHASE, M. D., Boston.) *Annals of Surgery*, June, 1905.)—This article treats of the dislocation of the semilunar bone with or without fracture of the carpal scaphoid. It is Part II. of the paper. Part I. (*Annals of Surgery*, March, 1905,) took up the diagnosis and treatment of scaphoid fracture. In the series of twelve cases reported the condition was "anterior dislocation of the semilunar." The authors prefer to include all their cases under this head in order to avoid the confusion that exists in the nomenclature of the subject. In their opinion dislocation of the carpus nearly always means anterior dislocation of the semilunar. The latter lesion may or may not be complicated by a coincident anterior dislocation of the proximal fragment of the scaphoid. The reason why the cuneiform does not dislocate with the rest of the proximal row in these cases is probably due to the fact that the ligaments which keep the cuneiform in relation to the semilunar are much more easily torn than the more resilient structures which lie on its ulnar side. The twelve cases include the following varieties: Recent unreduced dislocation of the semilunar without fracture of the scaphoid; recent unreduced dislocation of the semilunar with fracture of the scaphoid; old unreduced dislocation of the semilunar without fracture of scaphoid; old unreduced dislocation of the semilunar with fracture of the scaphoid. These cases were treated in several ways, *i. e.* by rest and massage without reduction, by immediate reduction either manual or by open incision, by reduction several weeks after injury, by excision of the proximal portion of the scaphoid, or the semilunar and proximal portion of the scaphoid. In the considering of the mechanics the conclusion is that the dislocation results from hyperextension of the wrist, the reduction manual must take place, therefore, by hyperflexion. The symptoms are such as would lead a physician to make a diagnosis of Colles' fracture, or severe sprain of the wrist. A lateral view of the deformity suggests the "silverfork" of Colles' fracture. Inability to flex or extend the fingers

is a striking feature, and comparison of the hands shows that on the injured side much smaller and shorter, looking like the hand of a different person. The x-ray is the ultimate means of diagnosis, especially as to fracture of the scaphoid. The cases are seen almost always in males between the ages of youth and late maturity when activity makes the individual liable to meet injury. The cases reported are analyzed and a complete resume of the literature is given. The conclusions at which the authors arrive very well summarize the article.

Conclusions.—1. "Sprains" of the wrist which do not promptly recover are in many cases fracture or dislocation of the carpal bones.

2. The large majority of such carpal injuries are either simple fracture of the scaphoid or anterior dislocation of the semilunar bone.

3. These two injuries are frequently combined.

4. Simple fracture of the scaphoid gives a definite clinical picture, and may be recognized even without the x-ray, by (*a*) history of fall on the extended hand, (*b*) localized swelling in the radial half of the wrist joint, (*c*) acute tenderness in the anatomical snuff box when the hand is adducted, (*d*) limitation of extension by muscular spasm.

5. A broken scaphoid has little power of repair.

6. Anterior dislocation of the semilunar bone should be recognized clinically by (*a*) history of injury to extended or twisted wrist, (*b*) a silver-fork deformity, (*c*) a tumor under the flexor tendons of the wrist, just anterior to the lower end of the radius, (*d*) a shortened appearance of the palm as compared to the other hand, (*e*) stiffness of the partially flexed fingers, with pain on motion.

7. Recent dislocation may be reduced with good results even after the fifth week by hyperextension, followed by hyperflexion over the thumbs of an assistant held firmly in the flexure of the wrist on the semilunar.

8. Irreducible dislocations demand excision of the semilunar and the whole or a portion of the scaphoid if there is coincident fracture of the latter.

Rupture of the Tendon of the Biceps Flexor Cubiti.—W. W. KEEN, M. D., Philadelphia (*Annals of Surgery*, May, 1905).—A case is reported where the injury resulted from a violent muscular effort to catch a hand-ball; the individual was an athletic teacher. Examination of the injured arm revealed about 25 per cent. disability. On flexion against resistance the biceps belly terminated at its upper portion suddenly, and no tendon could be felt above that point; also the upper end of the belly felt flabby and soft. Operation was done, the biceps was laid bare, and the tendon of the long head was found lying tortuous like a snake. A fusiform swelling was found in the tendon about 2 cm. below the groove in the humeral head; here there was effusion and discoloration. The sheath was intact, making it clear that rupture had taken place within the sheath, and elongation had followed union. A tendon suture was done at the point of injury, and result has been perfect return of function. In the literature but two cases where operation was done have been reported previous to this paper, one for rupture of the belly, the other for rupture of the tendon. There are, however, seventy-two cases of rupture reported. The rupture may take place in the following locations: In the belly of the muscle, either the portion be-

longing to the long or the short head; or the belly after union of the two; at the transition point between the muscular belly and one of the upper tendons; at the transition point between the belly and the lower tendon; in the continuity of the long head tendon; at the point of insertion of this tendon to the rim of the glenoid cavity, or at least within the capsular ligament. The tables are unreliable, however, as so few cases have been verified by sight. Treatment of the cases has been in many instances none at all, or a bandage, massage and electricity. This latter the author condemns, as it would separate the portions of the muscle rather than approximate them. The few cases where operation was done show perfect recovery, whereas in the other cases lack of function has been very marked.

The Early Operative Treatment of Hip Joint Disease—Report of Two Cases.—THOMAS W. HUNTINGTON, M. D., San Francisco (*The American Journal of Medical Science*, July 1905).—If an attack can be instituted through a channel which will avoid interference with the joint capsule, afford relief of tension and admit of more or less complete removal of the infected tissue, such a policy would be based on sound surgical doctrine. The author proposes to do this by exposing the great trochanter and tunnelling up through the neck, even into the head, with a bone curette. He quotes Bradford, Sherman and others as pointing out the danger of such an operation, but, nevertheless, he has operated on two cases, with an arrest of symptoms and immediate improvement following drainage of the foci. He points out the value of an improved x-ray technique which would enable the surgeon to recognize and operate upon hip disease at its very incipency.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

A Note on the Condition of the Tendo Achilles Jerk in Diphtheria.—ROLLESTON (Brain Spring, 1905).—One hundred cases of diphtheria were examined for the purpose of this paper. It was found that the percentage of lost achilles jerk was not as large as that of the knee jerk. It was also found that whenever the achilles jerk was lost the knee-jerk was also lost. In twenty cases the reflex was totally absent. In forty-seven cases the achilles jerk was more or less affected. Some of the conclusions are as follows: The frequency and extent with which the achilles jerk is affected bear, like albuminuria and paralysis, a direct relation to the character of the initial faucial attack. They are completely abolished in all cases of diphtheritic paraplegia. Their absence may be the only evidence of the loss of power of the lower limbs. Like the knee-jerk they are likely to be lost at an early stage of the disease and to remain absent long after all other symptoms of the disease have

passed away. The achilles jerk, like the knee-jerk, may appear on one side of the body before it does on the other.

On Four Fixed Vertebral Points and the Variations in the Subjacent Spinal Segments in Twenty-two Autopsies.—MUSKENS (*Rev. Neurology Psychiatry*, June, 1905).—This is a most valuable paper and deserves to find a wide publicity. The author attempts to find, by means of fixed points on the spinal column, the variation of the corresponding spinal segment. The fixed points selected are the same in every case and are the fourth cervical, first dorsal, seventh dorsal and twelfth dorsal. The body was laid horizontally face downward and long nails were fixed in the vertebrae corresponding to these points. The spinal cord underneath was then examined. A table is given with results obtained, as likewise a very clearly devised diagram. One very important point which this research brings out is the difference between the right and the left sides. From the operative point of view this study is of great importance for the reason that the results here obtained explain the frequency of the negative findings in opening the column for myelitis resulting from fracture or trauma. The result will depend often upon whether there is present a prefixed cord, that is a cord with relatively high position of the segments, or a post-fixed cord, that is one in which the segments are relatively low in position.

A Case of Toxic Degeneration of the Lower Neurons.—DONLEY (*Bos. Med. Surg. Jour.*, June 29, 1905).—The present paper consists of a report of a case and discussion of the pathological and clinical resemblances of this condition and acute poliomyelitis, peripheral neuritis, and Landry's paralysis. Young woman, age thirty, shortly after an acute febrile attack, developed weakness and atrophy in the interossei, thenar and hypothenar muscles of the hand, the extensors of the wrist and fingers and the small muscles of the feet, together with the anterior tibial groups. There were no sensory disturbances at all. The condition, after reaching its maximal intensity, constantly improved and continued to improve. In 1902 Stanley Barnes first described this group of cases which had hitherto been unrecognized, and gave to them the name of toxic degeneration of the lower neurons. These tentative conclusions are drawn from the experience of this case. First, Toxic degeneration of the lower neurons, acute anterior poliomyelitis, peripheral neuritis and Landry's paralysis are essentially degenerative conditions of the nervous elements. Second, The exciting cause of this degeneration is a toxæmia, which may be the result of bacteria, auto-toxins or poisons introduced from without. Third, The whole neuron, both the cell and fibers, suffers in every case, the clinical symptoms depending upon the intensity, the duration and the anatomical situation of the morbid process.

A Contribution to the Study of the Relation of General Paralysis and Tabes Dorsalis.—COTTON (*The American Jour. of Insanity*, June 4, 1905).—This study has for its purpose to examine more closely into the relation both clinical and pathological, which exists between tabes and general paralysis. Twelve cases are given in some detail as illustrating the va-

rious types of tabo-paralysis. The conclusions are as follows: 1. That clinically tabes and general paralysis present many analogies in etiology, symptomatology and course. 2. That the occurrence in the same individual is more than a coincidence. 3. That in these cases of tabo-paralysis the symptoms presented are identical with the symptoms of general paralysis and tabes when seen apart, only differing in degree according to the extent of the anatomical lesion. 4. That the clinical symptoms of tabo-paralysis have the same anatomical basis as in the separate disease. 5. That anatomically the affection of the posterior columns of the cord, as seen in tabo-paralysis, does not differ from the picture presented in pure tabes. The same systems are affected and the segmental character of the process is the same, also that the process in the cortex is identical with that of general paralysis. 6. While the above facts show the intimate relation between general paralysis and tabes dorsalis, the unsettled status of their pathogenesis at present prevents their identity being absolutely established on an anatomical basis.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

Lavage of the Renal Pelves in the Treatment of Bright's Disease.—AYRES (*Medical News*, July 1, 1905.)—Not enough importance has been given to the probability that a large percentage of the cases of chronic nephritis, in whom no discoverable cause for the inflammation can be found, are really due to extension of inflammation from the renal pelvis.

Lavage of the renal pelves is only applicable in selected cases of nephritis, and will certainly cure a beginning nephritis that is due to extension of inflammation from the renal pelves. In sub-chronic and chronic parenchymatous nephritis the procedure will check the disease and markedly improve the general condition of these patients, in those cases that have not reached the stage known as cirrhotic kidney.

Cirrhotic kidneys are not influenced, or are made worse. One who is not properly trained in the technic of renal lavage cannot possibly improve the condition of the kidney and may do harm. It requires great delicacy in handling the instruments, and much patience and gentleness with the injections. Asepsis must be rigorous. If the injections are too strong, too copious, or are given with too much force they are liable to cause pain and renal colic, and will not benefit the patient. The straight cystoscope is preferred, causing less pain and damage. The medication must be selected to suit the case. A proper lavage of the renal pelvis consists of repeated injections of small quantities of a medicated solution through a catheter that has been passed well up the ureters towards the pelves, at a temperature of 105 to 110 F. Silver nitrate in a vehicle of boric acid, 1-8000, increasing slowly to 1-2000 renders good service. As the catheter is withdrawn the solution is deposited all along the ureter so as to treat that organ. The patient is

then requested to pass the water remaining in the bladder, a Janet wash of silver nitrate is given to complete the operation.

Some Surgical Notes on Tuberculosis of the Kidney.—KELLY (*British Med. Jour.*, June 17, 1905).—The following salient points are emphasized:

1. Is the organism found the smegma bacillus? How was the urine secured? Was it by voiding or by catheterization?
2. Given the tubercle bacillus in the mixed urines, from which side does it come? Determine by catheterization the appearance of the ureteral orifice and the thickened ureter.
3. Is the opposite side entirely free from disease? Bear in mind that a simple pyelitis is not infrequent in the opposite kidney.
4. Bear in mind that opposite ureter may show marked thickening (periureteritis), and yet the kidney be free from tuberculosis.
5. Note carefully to what extent the bladder is affected, as having an important bearing on the operation and the subsequent treatment.
6. Determine the urea coefficient of the opposite kidney. Is it able to support life?
7. Look carefully for disease elsewhere. Is there a tuberculosis of the genital organs? Is there any pulmonary or glandular tuberculosis?
8. In injecting guinea-pigs remember that tubercle bacilli may pass out of the bladder, if your patient has phthisis, without injury to the kidney.
9. Remember that the enlarged kidney found in the loin may be the one functionally enlarged—and, therefore, the only sound organ. Twice has such a kidney, doing all the work of the body, been taken out. There is a great risk of making this mistake.

The Value of the Use of a Shadowgraph Ureteric Bougie in the Precise Surgery of Renal Calculus.—FENWICK (*British Med. Jour.*, June 17, 1905).—The use of a metallic stylette in the ureter catheter with which the ureter is catheterized before radiography is done, when looking for a calculus shadow, has been of signal service to Fenwick in differentiating stones in the ureter from shadows that might be caused by other bodies. He exhibits skiagraphs of cases apparently showing calculi in the ureter. When exposed again with the catheter in the ureter, the shadows proved to be outside of the ureter, and were demonstrated at the time of the operation to be shadows of calcified lymph glands or arteries.

The Possibility of Avoiding Confusion by the Smegma Bacillus in the Diagnosis of Urinary and Genital Tuberculosis—An Experimental Study.—YOUNG and CHURCHMAN (*Amer. Jour. of Med. Sciences*, July, 1905).—From their experience in a number of cases the authors offer the following conclusions:

(a) It may be impossible, in cases with organisms in the urine resembling the tubercle bacillus in morphology and stain, to eliminate the diagnosis of tuberculosis by any clinical feature.

(b) It may be impossible to eliminate such a diagnosis by cystoscopic examination.

II. From a review of the literature.

(a) It is impossible to distinguish positively in every case between the tubercle and smegma bacillus by any method of staining now known. All those widely tried have proved unsatisfactory in some cases, and the few with clean records have been tested too little to warrant any conclusions about them. Moreover, the striking similarity in staining properties between certain members of the smegma group and the tubercle bacillus make it seem quite likely that it is irrational to suppose that any staining method which applies to one will not, in some instances, apply also to the other.

(b) The confusion in diagnosis cannot surely be avoided by catheterization.

(c) Animal inoculation is a tedious method and this is sufficient to condemn it if an equally sure method can be provided in its place. It may, of course, be necessary when *no* red-staining organisms can be found.

(d) Cultures are unsatisfactory, because of the uncertainty of the smegma bacillus to grow, and of the difficulties of growing either organism. The method is a slow one; it is liable to be unsuccessful because of contaminating overgrowth, and even when cultures have not failed we may be thrown back on staining or tedious inoculation methods to identify the organism.

III. From the examinations made.

(a) The smegma bacillus is a scant invader of the male urethra and seldom occurs in great quantity.

(b) Its quantity in the fossa navicularis varies, habits of cleanliness aside, with the anatomical relations of glans and foreskin.

(c) It is not found in the bladder nor in the posterior urethra.

(d) It may, by simple irrigation with a special nozzle capable of being introduced down the urethra, be removed from the urethra—probably so as not to be found subsequently in scrapings from the fossa, navicularis, *certainly* so as not to contaminate urine passed through it.

(e) The method of cleansing, by washing of the glans and irrigation of the urethra, gives a sure means of eliminating, in the male, the smegma bacillus as a confusing factor in the microscopic diagnosis of genital and urinary tuberculosis.

(f) Without urethral irrigation it may be impossible to say that organisms found in the urine and taking the carbol-fuchsin stain are not smegma bacilli.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

Treatment of Vertigo, Tinnitus and Deafness by Babinski's Method.—TRETROP, of Antwerp Hospital (*Annals of Otolaryngology and Rhinology*, March, 1905), reviews the following syllogism of Babinski:

(a) Voltaic vertigo has its origin in excitation of the labyrinth.

(b) Rachicentesis affects voltaic vertigo.

(c) Therefore rachicentesis affects the labyrinth.

The quantity of fluid withdrawn at first was four to six cubic centimeters; later it was increased to fifteen or twenty cubic centimeters. Tretrop punctured all patients in the lateral decubitus after anesthesia of the skin with the coryleur and did either a Quinke or Chipault puncture.

The functional results have been encouraging, the vertigo regularly influenced, generally completely disappearing, the tinnitus following a similar course. Tretrop obtained without any doubt unexpected results in three cases in a considerable improvement of the hearing. He thinks otology is about to be enriched with a new procedure which in certain definite cases may cause vertigo and tinnitus to disappear and sometimes even to improve deafness materially.

Psamomma of the Maxillary Sinus, with Report of a Case.—J. C. MUNRO (*Denver Medical Times*, June, 1905), quotes Ziegler's definition of psammoma as a sarcoma or fibro-sarcoma of the dura, inner meninges or pineal gland, which contains concretions of lime, in greater or less abundance. Some of these concretions are similar in structure to the normal brain sand, the basis of their formation being a concentric mass of cells which have undergone hyaline degeneration. They usually form round nodules and may be of multiple occurrence.

Munro's report is briefly: Delia C., age twenty, consulted Dr. Greenwood, December 1902. Seven years prior to this she had noticed that the left eye was a little more prominent than the right. Year by year this had become more marked. At no time pain or interference with vision. The lids of the eye were closed with difficulty. The fundus was normal and V = 20-20. The eye could not be pushed *directly* backward, but could be pushed a little upward and backward. Palpation revealed a smooth, rounded mass in the lower part of the orbit, beginning at the infra-orbital ridge and running upward and backward as far as the eye would allow the finger to go. Laterally the mass could be felt to extend out to the side walls of the orbit at the level of the canthi. The patient was subsequently sent to Dr. Munro who did a modified Kronlein operation. A slightly fluctuating tumor was found lying behind, below and to the outer side of the globe; on chiselling the outer edges of the wall, which proved to be soft bone of the thickness of blotting paper, a large cyst-like tumor was encountered, full of reddish granular material, feeling like a mixture of sand and putty. The antrum was opened and the same gritty material was found.

The diagnosis after macroscopic and microscopic examination of the mass approximating 15 c.c. in bulk was "psammoma of a peculiar type which should be classed as a sarcoma."

The results of operation were good in general, disappointing only in the failure to restore the globe to its normal position.

Remarks on Penetrating Wounds of the Neck.—HENRICKSEN (*Archiv fuer Laryngologie und Rhinologie*, Band 17, Heft 2), describes a case of attempted suicide on the part of an insane woman. The razor wound severed the trachea, but was at once sewed and an uneventful recovery took place. After two weeks the patient returned to the hospital with severe dyspnea, coming on suddenly after a dyspnea of a mild grade.

Stenosis of the larynx was present and tracheotomy was performed. Under the right vocal cord a scar was found extending obliquely to the left vocal cord and there was a yellowish grey formation lower down on the rear wall of the trachea. The patient continued to use the tube for two weeks when no improvement occurring, she came for the first time to the author. The laryngoscope showed a diaphragm-shaped scar 3 c.m. below the rima glottidis, which formation had a small opening in it behind. A second tracheotomy above the first was performed, the circular scar tissue removed and the subsequent cicatrization combatted by intubation with tubes of increasing size, beginning with one intubation a week, and increasing to three times weekly before the patient was discharged.

The length of time the tube was left in the larynx was also increased from five minutes to seventy-five. After five weeks the patient was discharged with very slight stenosis remaining, and free, easy breathing through the natural passage. The author observes that the large vessels of the neck are frequently not injured, as the suicide throws his head back, bringing the larynx prominently forward. Suicidal cuts are, as a rule, not so deep as homicidal ones. The former often have irregular edges and both show retraction of the skin at their edges from contraction of the platysma. Emphysema is a prominent symptom, especially if the wound is small and oblique. Bleeding is profuse even if the larger vessels are not injured. The recurrent laryngeal nerve is often injured, resulting frequently in a unilateral paralysis of the vocal cords. The passage of air through the wound shows that the air passage has been entered.

Spontaneous Bleeding as a Result of Erosion of the Transverse Sinus in Otitis Due to Scarlet Fever.—LEBRAM (*Zeitschrift fuer Ohrenheilkunde*, June, 1905).—The author records two cases. In the first a seven-year-old child, with rather severe general symptoms, developed on the fourth day symptoms of mastoid abscess on the right side, was operated on and the cells found full of pus. During the operation the sinus was laid bare in one small spot, but not broken into. Its wall appeared then, normal and healthy. Two days later the left side showed symptoms similar and was operated on, the cells being also found full of pus. Ten days after the first operation a sudden, profuse bleeding drenched the dressings on the right side. It was found to come from a small hole that had eroded into the sinus where it had been laid bare. Tamponing stopped it, but the bleeding returned whenever the tampon was removed, even after it had been left several days in situ. The bleeding finally failed to recur after the tampon had been left in for a period of eleven days, but in this period slight pyæmic symptoms developed and a secondary abscess appeared on the left thigh. After this was opened and drained the child recovered.

The second case, that of an eleven-year-old child, was a very severe one from the first, with high fever and clouded sensorium. On the fourth day mastoid abscess developed on the left side, and on the same day paralysis of the left facial nerve. Operation showed the cells full of pus, and the sinus wall was uncovered in one spot as before. Three days later a profuse hemorrhage from the wound occurred and was, as in the

previous case, from the erosion of the sinus wall at the uncovered spot. The tamponing stopped the bleeding temporarily, but the next day paralysis of the right facial, right arm and right leg developed, and the temperature remained high and the pulse very bad. The following day a marked difference in the pupils was noticed, and pronounced exophthalmos on both sides, and the child died of heart failure the day following this. The autopsy showed a circumscribed, purulent meningitis, thrombosis of the cavernous sinus and circumscribed encephalitis on the left side.

The writer contends that the infection causing the encephalitis and meningitis spread through the blood stream (sinus) and not from the ear directly. His conclusions are as follows:

(a) That the transverse sinus is the source of the bleeding following the operation for mastoid abscess, and that this possibility should be considered as one of the serious complications of scarlet fever where mastoid disease develops, and that the seat of operation should be carefully watched for its occurrence, and the patient kept in bed at least ten days after the operation.

(b) That it may occur in chronic or acute mastoid diseases.

(c) That it is much more common in the cases reported in literature in males than in females.

(d) That the critical period is the first fourteen days after operation.

(e) That the erosion of the sinus wall occurs before thrombosis.

(f) That there are two ways of stopping the bleeding: (1) by tamponing, which is the safer, but the risk of secondary pyæmia is greater; (2) central compression of the sinus with tying of the jugular vein, requiring another narcosis, which the patient is often too weak to stand, and, moreover, is often unsuccessful, though the danger of secondary pyæmia is lessened.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

MARTIN F. ENGMAN, M. D.

The Employment of Oxygenated Hydrogen in Dermatology and Neurology.—W. SCHOLTZ (*Archiv. f. Derm. und Syph.*, t. 21, p. 371).—Scholtz has employed, with success, oxygenated water, 30 p. 100 of Merck, in the following affections: First, ulcerating and gangrenous processes in the skin; second, mercurial stomatitis in the form of gingivitis and pus from ulceration. In these cases he prescribes washing with a 2 or 3 per cent. solution, and each day mopping out the mouth with the pure solution; third, in suppurating buboes and soft chancres; fourth, in buccal leucoplakia; fifth, comedones, acne, freckles and the pigmentations of other nature, where he has seen often very good effect.

Inquiry into the Etiology of Infantile Eczema.—ARTHUR J. HALL, F. R. C. P. (*British Jl. of Derm.*, June, 1905).—This is a series of interesting articles that have been appearing in this journal for several numbers.

They are well worth careful study. Several very important questions in relation to this disease in infants are discussed, but they are far too numerous to quote in detail. We take them in the following order:

(a) Sex.—Of the sixty cases in his collection, 78.3 per cent. were males and 21.7 were females.

(b) The Age of the Mother.—Below twenty-five years, 29 per cent.; above twenty-five years, 71 per cent.

(c) Number and Relative Ages of Other Children.—Defective child was firstborn in eight cases, secondborn in fourteen cases, thirdborn in fifteen cases, fourthborn in nine cases, fifthborn in five cases, sixborn in seven cases, seventhborn in one case, *i. e.*, in over 50 per cent. of the cases the affected child was either second or thirdborn. The table shows that, as a rule, eczematous infants are not the children of very large families, nor is the average interval between the birth of the affected child and of the preceding one, of short duration. This is a most important point, as very frequent childbearing not only tends to exhaust the mother and thus possibly to affect her milk injuriously, but also increases her domestic duties and tends toward neglect in the care of the children. There is no evidence of either of these factors in these cases.

(d) Evidence of Skin Disease in Mothers.—There is a history of definite outbreak of eczema in 13 per cent. of the cases, presented slight evidence of seborrhea in 31.5 per cent. of the cases; vague history of skin disease in 11 per cent., no past or present skin disease in 44.5 per cent.

(e) Evidence of Skin Disease Past or Present in Other Children.—Of course the cases of only one child may be eliminated, which leaves fifty cases to analyze in this class. Of these fifty cases there are 123 children in this analysis. There was a history of an outbreak of eczema in 2.43 per cent., there was a history of some vague skin disease in 7.29 per cent., no skin disease at all in 90.28 per cent.

(f) The Age of Child when Eruption First Appeared.—Seventy-five per cent. of the cases began between the ages of one and four months.

(g) Situation of the First Appearance of the Eruption.—Cheeks, forehead or temples in thirty-two cases; scalp or behind the ears, twenty-five cases; elsewhere, three cases. Therefore in 95 per cent. of the cases it appeared somewhere upon the face or head.

(h) Time of Year in Which the Eruption First Appeared.—It is a remarkable fact in this analysis that the smaller percentage of cases occurred in the months of July, August and September, which are those months in which all kinds of gastro-intestinal affections are particularly prevalent in infants. The largest number of cases occurring in any single month was in January, the next largest was in October, and none in June. From the trend of the author's argument, he seems to think cold is a greater factor than heat in these cases.

(i) The Nature of Food as a Factor in these Cases.—Breast fed only in thirty-three cases, breast and other things in eighteen cases, bottle fed entirely in eight cases.

(j) Relation of Vaccination in Infantile Eczema.—Cases in which vaccination preceded rash, fourteen; cases in which rash preceded vaccination, forty-six.

(k) Evidence as to Dentition.—Interval between rash appearing and first dentition was less than two months in one case. Interval between rash appearing and first dentition was greater than two months in thirty-

seven cases. First dentition preceding rash, seven cases. Rash preceding first dentition, forty-nine cases. The author concludes from a thorough analysis of the cases in this regard, that we can once for all eliminate dentition as an etiological factor in infantile eczema, and feel quite clear that when the two co-exist it is a simple chance as regards their relationship to one another.

(1) Evidence of Gastro-Intestinal Disturbances.—Inquiry into this point was made in fifty-two cases. Of these cases, there was some malnutrition in eight, none whatever at any time in forty-four. There was evidence of rickets in eight, there was no evidence of rickets in twenty-eight, doubtful in fifteen. These cases showed quite a remarkable exemption from gastro-intestinal trouble, and the author here again refers to the fact that a very small per cent. of these cases began during the months when gastro-intestinal disturbances are most prevalent in infants. He does not place much stress upon the coincidence of constipation.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

Early Detachment of the Retina in Cases of Sarcoma of the Choroid.—J. H. PARSONS (*Ophth. Review*, June, 1905).—This paper is based on a histologic study of fifty cases of sarcoma of the choroid and ciliary body. The following conclusions were drawn from a special study of eight cases in the earlier stages: (1) That detachment of the retina occurs earlier in sarcoma of the choroid than would be gathered from the ordinary text-book description. (2) That, apart from the elevation at the site of the growth, where there is no true detachment in the early stages, the detachment manifests itself invariably as a shallow, simple detachment over the lower hemisphere. (3) That this detachment is frequently entirely isolated from the tumor, the intervening retina being in normal apposition to the choroid. (4) That this is invariably the case when the tumor is in the upper hemisphere; when the detachment is continuous with the elevation at the site of the tumor it is in the early stages, merely due to the accident of the position of the growth, *i. e.*, near or in the lower hemisphere. (5) That this isolated detachment is simply the first stage of the total detachment which supervenes.

These deductions do not apply to the earliest stages of sarcomata of the ciliary body, in which case the fluid can only pass into the vitreous and is excreted at the angle of the anterior chamber. In the case of the choroid the fluid accumulates beneath the retina, at once gravitating to the lowest part. The tumor, acting as an irritant, evokes an excessive secretion of a highly albuminous blood-plasma-like fluid from the choroid and it is the accumulation and imprisonment of large quantities of this fluid beneath the retina which gives rise to secondary glaucoma.

Two errors in diagnosis are possible. (1) The tumor may be recognized, but the shallow detachment in the lower hemisphere missed.

This error is obviously of little importance. (2) The inferior detachment may be regarded as idiopathic, the tumor being missed.

It is, therefore, of the greatest importance that in any case of apparent simple detachment of the retina, an examination of the interior of the eye through the fully dilated pupil should be made. This examination, in conjunction with a careful plotting of the visual and color fields, should give positive information for or against the presence of a tumor.

The Treatment of Inoperable Cases of Malignant Disease of the Orbit by the X-ray.—C. S. BULL (*Med. Record*, June 24, 1905).—Bull's experience with the x-ray in ten cases of malignant disease of the orbit and adnexa has convinced him that the claims of certain workers in this field are too optimistic. He believes that tumors confined to the orbit should first be subjected to radical operative removal, followed by a course of radiotherapy. He would limit the exclusive use of the ray to cases where total removal is impossible owing to involvement of the neighboring sinuses.

Carcinomata react more favorably than sarcomata. Often a shrinkage of the tumor will take place without a coincident improvement in the general condition. In almost every case the pain has been notably diminished or entirely abolished.

An Operation for Total Symblepharon of the Upper Lid. Preservation of the Globe.—MAZET (*Soc. Franc. d'Ophtalm.*, May, 1905).—In the case reported the entire upper lid was firmly adherent to the upper bulbar conjunctiva and to the greater part of the corneal surface. The operation adopted was a modification of Abadie's and proved entirely and permanently successful. After free division of adhesions, a cul-de-sac, of a size sufficient to admit the introduction of a glass shell, was formed above. Ollier-Thiersch skin grafts, taken from the arm, were carefully adjusted to the freshened surface and pushed well up into the new-formed cul-de-sac. The glass shell was then introduced and the lids united by three sutures.

To insure retaining the vitality of the flaps, Mazet advises a free irrigation with normal salt solution.

Optic Atrophy Following Intoxication by Extract of Male Fern.—MEYER (*Assn. Silesienne pour l'Avancement des Sciences*, February, 1905).—Following the ingestion of a medium dose of extract of male fern, the patient, a young man of twenty-five, lapsed into coma lasting thirty-six hours. Vision was then found to be entirely gone in the right eye and greatly diminished in the left. Ophthalmoscopically, optic atrophy, both. Treatment proved unavailing.

Male fern acts as a poison to muscular tissue. Meyer believes that there occurred an ischemia of the retina due to the narrowing of the arteries. According to Uthoff's researches, the substance has a specific action on the nervous system.

On the Correct Use of the Giant Magnet.—O. HAAB (*Ophthalmoscope*, February, 1905).—In this paper Professor Haab outlines the essential points in the construction and use of the giant magnet.

The essentials of a large magnet for use in eye surgery are as follows: (1). It should be so constructed that the power may be concentrated at the tip. (2). It should be provided with a foot switch, so that the operator may turn the current on or off without the necessity of removing his hands from the patient's head or losing sight of the operative field. (3). It should be horizontally placed, so that the patient may readily withdraw his head at the first sensation of pain. (4). The tip should stand well away from the coil so that the eye may be kept in full view.

The patient is seated before the magnet with the arms resting on a wooden support. The surgeon, standing in front of or behind the patient, clasps the head (holding the lids apart with the thumbs), and brings the center of the cornea of the injured eye up to the tip. If the patient withdraws the head quickly, this is probably due to pain from pressure of the foreign body on the iris. In such a case the current is at once turned off. The positions of the head and eye are then so altered that a reapplication of the magnetic force will tend to draw the fragment obliquely through the pupillary space into the anterior chamber. When this has been accomplished an incision is made in the cornea, taking care not to allow the escape of aqueous. The fragment is then removed from the eye with the giant magnet tip applied to the lips of the opening, or by means of a magnetized spatula tip of the small magnet.

Great care must be taken to avoid getting the fragments entangled in the ciliary process. A fragment lodged 20 to 30 m.m. behind the surface of the cornea requires very strong magnetic power, which may be attained by removing the tip. If lodged in the retina it may be loosened by a series of jerks by alternately turning on and shutting off the current. Large fragments should be withdrawn slowly, which is accomplished either by diminishing the current or by placing the eye at a greater distance from the tip. If the fragment has entered through the sclera, and the wound of entrance is still fresh, it may be possible to extract through this wound. Even in such cases it is usually advisable to draw the fragment into the anterior chamber. If the eye has become infected an iodoform rod should be introduced into the anterior chamber. A fragment that has been long in the eye had best be left undisturbed.

SOCIETY PROCEEDINGS.

ST. LOUIS SURGICAL CLUB.

Meeting of May 10, 1905.

Dr. V. P. Blair read a paper entitled, "Conservation of the Parietal Motor Nerves in Abdominal Section," for which see page 602.

DISCUSSION.

Dr. W. C. G. Kirchner was of the opinion, that a practical way of avoiding injury to the nerves was by gauze dissection. Many used the knife too freely. If they would more often use gauze dissection, or the ends of blunt instruments, or the fingers themselves, many nerves could be saved. In hernia operations, especially, if the various layers were separated by gauze dissection, the nerves could be kept absolutely intact.

Dr. Blair said that he accepted as gospel truth Kocher's dicta, and followed the same to the limit of his skill. The basis of this paper was Kocher's teaching, that it was always better to cut across a muscle fiber than to cut a nerve, this with him being a motif stronger than skin cleavage. He quoted several passages from Kocher's "Operative Surgery," showing it was his belief that it was always proper to cut a muscle fiber in preference to a nerve. He said the paper was only intended to hit the high places, but he had evidently not emphasized several points as should have been done; for instance, as to cutting through the rectus. In cutting through the rectus longitudinally, at the junction of the outer third with the inner two-thirds, unless one saved the nerve trunks lying deep to the muscle, impairment of the outer part of the muscle would also result. In gall-bladder surgery one never could tell just how much room would be required, and the incision made two and a half inches below and parallel to the subcostal border, could be made with perfect ease, without the sacrifice of the nerves, and was preferable to the one just mentioned. He did not agree with Dr. Jonas exactly, and thought it very easy to locate the twelfth nerve and pull it out of the way. It had been mentioned that the numbness had eventually disappeared, after cutting the hypogastric nerve. After the destruction of sensory nerves, sensation does gradually recur, but function is not restored after the destruction of a motor nerve.

BOOK REVIEWS.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. For Students and Practitioners. By HOBART AMORY HARE, M. D., B. Sc. In one octavo volume of 1120 pages, with 129 engravings and 10 full-page plates in colors and monochrome. Cloth, \$5.00 net. Lea Brothers & Co., Philadelphia and New York, 1905.

Those who know Dr. Hare's invaluable book on "Diagnosis" will welcome the volume of "Practice" by the same fascinating writer. It covers the same field as the text-books of Osler, Musser and the like, and ranks with them.

CLINICAL DIAGNOSIS AND URINALYSIS. By JAMES RAE ARNEILL, A. B., M. D. The Medical Epitome Series. Edited by VICTOR COX PENDERSEN, A. M., M. D. Lea Bros. & Co., Philadelphia and New York.

This volume, very condensed and incomplete, is suitable neither as a student's text-book nor as a work of reference, but may find a useful place on the beginner's laboratory table.

CLINICAL AND MICROSCOPICAL DIAGNOSIS. By FRANCIS CARTER WOOD, M. D. 8vo, pp. xvii — 745, with 180 illustrations in the Text and 9 colored plates. New York and London: D. Appleton & Co. 1905.

It is difficult to discuss this wonderful book without excessive enthusiasm. It is by far the most complete and valuable work on the subject of medical laboratory work in the English language, and ranks with the best of the German text-books. The discussion of the technique of blood work, cryosecopy, serum reactions, gastric analysis, stool work, sputum and urine work and the like is as nearly exhaustive as is possible within the confines of a moderate sized volume. Whoever desires to take up one of the modern methods of medical laboratory examination will find adequate instruction here. The illustrations, especially the colored plates, are excellent and mostly original. It is a manual of equal value to the student, the practitioner and the laboratory specialist.

THE MEDICAL EXAMINATION FOR LIFE INSURANCE AND ITS ASSOCIATED CLINICAL METHODS, WITH CHAPTERS ON THE INSURANCE OF SUBSTANDARD LIVES AND ACCIDENT INSURANCE. By CHARLES LYMAN GREENE, M. D. Second edition. Octavo, with 466 pages and 99 illustrations. Philadelphia: P. Blakiston's Son & Co. 1905.

The work of the life insurance examiner is almost taking rank as a medical specialty. Examiners have need of special instruction in their work, since their attitude towards the applicant is so different from that of the physician toward his patient. Those interested in this field will find the information and instruction offered by this volume of value and interest.

THE URINE AND FECES. A Practical Manual on the Urine and Feces in Diagnosis. By OTTO HENSEL, Ph. G., M. D., and RICHARD WEIL, A. M., M. D., in collaboration with SMITH ELY JELLIFFE, M. D., Ph. D. In one octavo volume of 334 pages, illustrated with 116 en-

gravings and 10 colored plates. Cloth. \$2.75 net. Lea Brothers & Co., Publishers, New York and Philadelphia. 1905

The above is a compact summary of our present knowledge of urine and feces work. It is well arranged, brief, and provided with an adequate index. On the other hand, it suffers from the defects of its qualities. Its technical directions are not sufficiently detailed for the beginner, nor is the information it offers complete enough to make it useful as a work of reference. It is printed in large type, on heavy paper, with good margins. If the type had been a little smaller and the paper thinner, it might have served as a pocket manual, to which its contents most nearly correspond.

A TEXT-BOOK OF MEDICAL CHEMISTRY AND TOXICOLOGY. By JAMES W. HOLLAND, A. M., M. D. Fully illustrated. Philadelphia and London: W. B. Saunders & Co. 1905.

The remarkable developments of physical science in recent years have furnished the practical sciences with working principles of great value, and are being applied successfully to biologic problems in bacteriology, toxicology and pharmacodynamics. Cryosecopy, osmotic pressure, electrolytic dissociation, mass-action and radioactivity are becoming continually of greater importance to those interested in medical science, and to an increasing extent to the average practitioner also. The present work discusses the problems of inorganic, organic, physiologic and pathologic chemistry from the modern standpoint. While neither elementary enough for the poorly-equipped medical student, nor complete enough for the advanced laboratory worker, it occupies a position midway between the places filled by books catering to these two extremes, and will, therefore, be found of value as a book of reference to the busy practitioner of medicine or to the ambitious student.

STUDIES IN THE PSYCHOLOGY OF SEX—SEXUAL SELECTION IN MAN. I. Touch. II. Smell. III. Hearing. IV. Vision. By HAVELOCK ELLIS. $6\frac{3}{8} \times 8\frac{7}{8}$ inches. Pages xii-270. Extra cloth, \$2.00 net. Sold only by subscription to physicians, lawyers and scientists. F. A. Davis Company, Publishers. 1914-16 Cherry street. Philadelphia.

The doctrine of sexual selection was first set forth by Darwin in his "Descent of Man;" but, in Ellis' opinion, Darwin made the mistake of introducing the esthetic element as equivalent to the physiologic sensory stimuli through which sexual selection operates. The chief stimuli come, in the author's opinion, probably exclusively through the four senses of touch, smell, hearing, and above all, vision. Sexual selection is conditioned by sensory perceptions, and as such is fundamentally a psychologic process, which must be approached from the psychologic side. From this point of view the author analyzes the influence of these four senses upon selection in man. This fourth volume of the "Studies," like its predecessors, offers most interesting reading.

THERAPEUTISCHES TASCHENBUCH FUER DIE KINDERPRAXIS. Dr. B. SALGE. Fischer's medizin. Buchhandlung, Berlin. 1905. Pp. 158. Price, M. 2.60.

This little book is a compilation of formulæ in use at Prof. Heubner's clinic in Berlin, compiled by his well-known assistant, Dr. Salge. The whole field of pediatrics is covered in a clear, concise way, and the therapeutic indications for the various diseases distinctly set forth. A valuable addition is found in the fifty pages of carefully selected recipes for the preparation of all sorts of foods for children. The book will be a welcome addition to the list of shorter works devoted to the discussion of diseases of children.

GYNECOLOGY, MEDICAL AND SURGICAL. Outlines for Students and Practitioners. By HENRY J. GARRIGUES, M. D., New York. With 343 illustrations. Philadelphia: J. B. Lippincott Co. 1905.

The scope of this volume is defined by its author in the following words: "It is an outline of the whole system of gynecology, calculated to be a guide for beginners." Minor operations which the general practitioner is likely to undertake, are described in detail. In regard to others, the chief features are set forth. Those readers who seek information about anatomy, embryology, rare diseases, unusual operations, or about conditions connected with pregnancy and childbirth, are, by the author, referred to his well-known text-books of gynecology and obstetrics.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M. D., assisted by H. R. M. LANDIS, M. D. June 1, 1905. Lea Brothers & Co., Philadelphia and New York. \$6.00 per annum.

The present volume contains reviews of the literature of the past year on the following subjects: Hernia, by William B. Coley; Surgery of the Abdomen, by Edward Milton Foote; Gynecology, by John G. Clark; Diseases of the Blood, Dietetic and Metabolic Diseases, Diseases of the Spleen, Thyroid Gland and Lymphatic System, by Alfred Stengel; and Ophthalmology, by Edward Jackson. As heretofore, the reviews are given in the form of very readable monographs.

INTERSTATE MEDICAL JOURNAL.

VOL. XII.

SEPTEMBER, 1905.

No. 9.

ORIGINAL ARTICLES.

OPERATION IN HYPERTROPHIED PROSTATE.

BY HARVEY G. MUDD, M. D., St. Louis.

The importance of this subject could hardly be overestimated. However, the limits of this paper will preclude anything like a full or complete consideration of the present status of prostatic surgery. We will, therefore, confine ourselves to the discussion of only two phases of this most interesting and important subject—the time for operative interference and the choice of methods. It is well known that a very large percentage of old men suffer from enlarged prostate. While prostatic overgrowth is quite common after the age of fifty-five years, we must not forget that there is a small number of young men in whom enlargement takes place much earlier. Squier, in a late article, speaks of five patients of ages ranging from twenty-three to forty-eight years, in all of whom the prostate was of twice the normal size or greater.

Again, we frequently find a great discrepancy existing between the amount of prostatic enlargement and the degree of discomfort endured by the patient with prostatic symptoms. A small prostate will frequently cause disturbance out of all proportion to the amount of enlargement. Squier looks upon prostatic overgrowth not as a purely senile condition, but as an interstitial change, insidious in its onset, early affecting the innervation of the prostate and the prostatic urethra. Through close connection with the hypogastric plexus of the sympathetic, the lumbar plexus and spinal nerves, these changes give rise to many reflex symptoms in the bladder and kidneys, and to sexual disturbances as well. Later on, with lessened vigor of declining years, they may cause mechanical obstruction to the outlet of the bladder. These reflexes, due to disturbed innervation, frequently develop before attention is directed to the prostate as the real origin of the trouble. With advancing years, as the bladder muscle shares in the physical degeneration of age, symptoms of obstruction will become a more and more prominent and important factor in the situation. It will generally be admitted that prostatic enlargement, once begun, is progressive. In the majority of cases but little attention is given to preliminary manifestations; the increased frequency of urination—the occasional difficulty in

starting micturition, the retention of a few drops which dribble out after the act is apparently finished. Only when bleeding, pain or obstruction, seriously inconveniencing the patient, show themselves, is the matter considered of importance enough to consult the medical adviser. Usually at this time there is considerable residual urine. Only too often is the sufferer introduced to catheter life with its attendant dangers. Surgeons will generally admit that in only a small number of cases can the bladder be kept aseptic for any length of time after catheter life is begun. C. H. Mayo says "few individuals have a comfortable catheter life, and those who obtain relief for long periods in this manner only impress upon our minds that the average length of catheter life is (4 to 6) four to six years."

In the large class of those who have manual labor to perform for their living, or in old, feeble persons unable to secure assistance, it is practically impossible to secure asepsis. Apart from the impossibility of training workmen to render hands and all accessories clean for each catheterization, the lack of time and the expense of apparatus required, precludes the possibility of attaining asepsis except with the wealthier, leisure class. Given the necessary wealth and leisure, and in addition, a methodical habit, septic cystitis and many tortures to which prostatics are exposed, may be for a time avoided. Even so, the progressive increase of prostatic overgrowth does not halt. The patient grows steadily older and feebler; less and less able to help himself, and the prostate continues to increase in size. The difficulties increase as the ability of the patient to deal with them grows less. Year by year the catheter must be passed more frequently, until finally its use becomes almost incessant, day and night. Pain often becomes unbearable. The introduction of any instrument becomes more and more difficult, until it may be impossible for the patient, and even difficult or impossible for the surgeon. Hemorrhage becomes more and more a factor, and sooner or later septic cystitis is certain to follow. Hence the vital question comes home to us all: whether it is best to carry out catheterization as long as possible and then operate, or to interfere early before the kidneys are damaged by back pressure, and before other septic complications occur. The question of operation must depend on many factors: social as well as physical conditions must be taken into account. The poor football of fortune possessing neither the means nor the mentality to pursue catheter life, is in far different position when operation is to be considered from that occupied by his more fortunate brother, who is able to avail himself of all the measures modern surgery has developed to render catheterization less of a peril. Circumstances may modify the rule, but my feeling is that operation should be advised in the majority of cases as soon as definite obstructive symptoms are presented. Generally, the habitual employment of the catheter means atony of the bladder and septic cystitis, sooner or later, and with enlarged and obstructing pros-

tate means finally death by slow torture. Septic cystitis follows the frequent use of the catheter, even in spite of most rigid aseptic precautions, usually from the neglect of them.

In cases of doubt the catheter may be given a trial first. However, if the frequency with which it has to be used increases; if the bladder grows more irritable; if the amount of residual urine increases; if there be a tendency to development of a cystitis; if attacks of congestion occur frequently; if there is any difficulty in the passage of the catheter; if the introduction of the instrument causes bleeding; if there is the tendency to the formation of calculi in the bladder pouch behind the prostate; if specific gravity of the urine continually diminishes, the use of the catheter should be given up as a failure, as it is clearly shown that catheterism fails to fulfill the needed conditions. Unless there be special and weighty reasons for delaying operation, why expose patients to the additional risks incident to a policy of delay in operative procedure? To me the conditions seem closely analagous to those obtaining in disease of the appendix and gall bladder. The changes in the bladder, ureters and kidneys incident to obstruction are well known.

The dilatation of the kidney pelvis, atrophy of the renal substance, the damage done to the portion of the kidney remaining by interstitial nephritis, are the conditions most to be dreaded. They are mainly responsible for the mortality, and are the conditions I would especially emphasize. Patients should not be allowed to drift into a worn out and septic state from pain, cystitis and loss of rest. To operate on a strong, hearty old man at the beginning of catheter life, is quite a different thing from operating on the same individual when months or years of disturbed rest, pain and sepsis have exhausted him physically and mentally and left him a broken wreck, without resistance or recuperative power.

It is interesting in this connection to recall very briefly the development of the surgery of the appendix. But a few short years since only those cases were operated on in which there was evidence of appendiceal abscess; then came operations in the interval between attacks and, later, the operation on cases of acute appendicitis at the earliest possible moment, before suppuration, perforation or gangrene had occurred, with all the frightful dangers thereto appertaining. The tremendous decrease of mortality attending each advance in the surgery of appendix is now universally recognized. Who now would subject the victims of this dread disease to all the dangers of delay—when circumstances permit of early operation under proper conditions? The situation in hypertrophied prostate seems to me closely analogous. So soon as obstructive symptoms appear with enlarged prostate, the surgeon should carefully weigh the dangers, immediate and remote, incident to operative interference and those associated with a policy of delay. In my opinion the safe plan, in the great majority of cases would be to remove the offend-

ing organ with the first alarm sounded by the symptoms of obstruction. With early operation and with improved technique of this date, mortality will certainly be very greatly reduced and the diminution of the sum total of suffering will be almost incalculable. This consideration alone, the sparing of needless misery, the rendering comfortable of the late years of so many old men, is a matter of the utmost importance. Since euthanasia is not as yet permitted, or, I think, advisable, I believe there are few men who, if the matter could be made plain to them at the outset, would not gladly take the risk of an early operation rather than face the misery, the long-drawn out suffering of catheter life, to which the majority of prostaties are doomed if made dependent on the catheter.

Renal insufficiency is placed by many investigators as the most important factor in determining for or against operation. If operation be made early, before the obstruction has caused the well recognized secondary changes in the bladder, the ureters, the pelvis and secreting portions of the kidneys, the dangers to the sufferer are certainly thereby greatly diminished. Should some of these secondary changes already be established it should be no argument against the effort to relieve. Experience has proven that cases of pyelitis, the result of ascending infection, have been greatly improved or cured when the obstructing prostate was removed, thus affording free drainage of the bladder, ureters and kidneys. Just so kidneys which have been insufficient in their functions before operation have been greatly improved by the removal of urinary obstruction, thus affording free drainage. The chief danger of prostatectomy now lies in the fact that the condition of the patient coming to operation is such that any surgical interference is a matter of great gravity. Too often there exists an arteriosclerosis, cystitis, perhaps a pyelitis and some renal insufficiency. These facts, while they should be carefully weighed and their bearing on the outcome of interference duly considered, must not of necessity bar the sufferer from relief, or excuse us from making the effort to relieve. In the large class of cases which come to operation after changes in the kidneys, ureters and bladder secondary to urinary obstruction are pronounced, one great danger of operation has been the after results incident to general anesthesia. Frequently the effect of the anesthesia is to so seriously interfere with the excretion by already damaged kidneys as to turn the scale in the outcome. Whether chloroform or ether be the agent employed seems to make but little difference in the effect; the result is often disastrous. Uremic poisoning must answer for more deaths after prostatectomy than any other cause, perhaps for more than all other causes combined. It is my belief that the demonstration of the practicability of removal of the prostate without pain or shock under spinal cocaine anesthesia, marks a great advance. With the known dangers of any general anesthesia and the apparent freedom of danger from this form of local anesthesia—it must come more and more into use in just this

class of cases—I say apparent freedom from danger, for I do not feel that the harmlessness of spinal anesthesia is proven. In a recent case, a feeble, weak-minded old man of seventy-six years, whose kidneys were badly damaged and in whom renal insufficiency was marked, operation was undertaken at the request of the family who felt that the sufferer must necessarily be sent to an asylum, and that the inability to void his urine would there subject him to great suffering. Enucleation was made under spinal anesthesia; the patient seemed absolutely unconscious of pain and the operation seemed to cause little or no shock. His mind became much clearer almost immediately—he was propped up in bed the second day, and recovery was proceeding in an orderly way when it was rudely interrupted four days after operation by an attack of pneumonia, apparently hypostatic.

I believe that the spinal cocainization had nothing to do with the causation of the pneumonia, but this we cannot know, and must content ourselves with the Scotch verdict, “not proven.”

“Selection of cases” in our experience is an expression too often used to cloak timidity and to avoid interference in those cases which may swell a mortality rate. When the possibilities are understood by the patient and his friends, the surgeon must stand ready to endeavor to relieve, even at the risk of hurting his statistics. He must meet the indications and select the procedure best applicable to any particular case. The ability to do this wisely should be the goal toward which we strive. The choice of operation is a matter of importance. This choice is necessarily influenced by many conditions. The two lobes of the prostate in the process of development fuse in front and behind the urethra. Alexander says: “The layer of prostate behind the urethra does not enlarge; the enlargement occurs in the lateral and developing middle lobes. The middle enlargement may be of three varieties: First, muscular, those cases with a bar; second, glandular and then encapsulated; third, hypertrophy of mucous glands and tissue.”

Cases in which this can be accomplished without serious disturbance should be carefully examined with the cystoscope. In many cases this can only be done at the expense of bleeding and trouble serious enough to outweigh the advantages. Can the diagnosis of muscular bar be accurately made, the Bottini operation might be considered, though this procedure is being less and less used. Ligature of the internal iliac arteries, vasectomy and castration have all proved disappointing. The relief from partial prostatectomy is not adequate to the risks, and continued growth of the remaining prostatic tissue is quite apt to nullify the results first obtained. So that it seems to me that the practical question is now, not whether we could advise catheter life, vasectomy, etc., but whether the case is suitable for prostatectomy, and, if so, what form of prostatectomy is advisable.

Three general schemes are available for total enucleation :

First.—The suprapubic.

Second.—The method of attack of the gland through the wall of the urethra by median perineal incision.

Third.—Exposure of the prostate by dissection and enucleation under guidance of sight as well as touch.

In spite of the strong claims made by the advocates of suprapubic operation, and notwithstanding the brilliant results of some operators, I believe the shock and mortality following the perineal operation is, and will prove to be, less than follows the suprapubic section. In addition, the suprapubic operation means inevitably the making of two wounds in the bladder, an incision in the upper bladder wall and a lacerated wound of the base with a larger or smaller blind pouch beneath, with freshly torn blood vessels and open lymph spaces, which become at once in many, yes, in most, cases the receptacle of septic urine.

Often there must be excessive mutilation of the floor and neck of the bladder, and it seems at least probable more frequently incontinence of urine following. Add to this the dangers arising from urinary extravasation and infection of the deeper pelvic planes, ever to be dreaded in the suprapubic operation. A surgeon possessing the operative skill of Freyer may enucleate many prostates by this method without tearing through the capsule, but with the majority of operators this is a source of danger to be considered. In the perineal operation, while it is quite desirable that enucleation should be carried out without lesion of the capsule other than the opening made for the enucleating finger: even if such tearing should occur, no harm other than moderate bleeding from the prostatic plexus between the true capsule and the sheath derived from the pelvic fascia, is to be anticipated. In stout patients the great depth of the prostate from the surface in the suprapubic operation makes it difficult or impossible to avoid considerable laceration of the prevesical cellular tissue. This exposes patients to two serious complications—oozing, prolonged—of blood into the subperitoneal tissue and subsequent infection and cellulitis. In suprapubic operation subsequent drainage must be against gravity, and is often a source of serious trouble. The pocket left by enucleation is never completely emptied. The foul urine incident to the cystitis, commonly present, often becomes ammoniacal; the wound is apt to become sloughy and coated with phosphates. These conditions may delay healing for many weeks. The perineal enucleation is anatomically more direct; does not inflict a double wound on the bladder; does not open the prevesical cellular tissue; most important, perhaps, is the fact that drainage of the bladder, and after treatment are facilitated by a dependent opening. As between the perineal operations the operation described by Young, a modification of Prout's method, seems to me most satisfactory. The advantage of this procedure over that practiced by Albarran, Goodfellow and Bryson, is, that

the whole operation can be done quickly, but deliberately, under the direct guidance of sight as well as touch. This makes the operation much more adaptable to varying conditions. In the other perineal operation the surgeon must depend entirely on touch for guidance. In the Goodfellow or Bryson operation there must inevitably be wide destruction of the prostatic urethra, and it seems to me that the operator could not be sure of making a complete enucleation in all cases; also, that there would be greater danger of tearing into the rectum and bladder. The operation described by Young permits precise examination of the whole prostate within and without the bladder. The preliminary stages offer a method of exploring the bladder, which, for many purposes, is superior to a suprapubic cystotomy. Suprapubic lithotomy, with or without prostatectomy in adults, gives considerable mortality, but heretofore the obstacles imposed by enlargement of the prostate and the depth of the bladder have made lateral or median perineal lithotomy even more difficult and dangerous. Proust's or Young's method largely does away with these difficulties, and the bladder and prostate can be easily and safely opened through the perineum either for exploration, removal of calculi, or for complete or partial removal of the prostate. The open perineal operation, properly carried out, permits rapid and simple exposure of the prostate, and the complete enucleation should occupy little, or perhaps no longer time, than the suprapubic operation, or that by median incision and attack of the prostate through the urethra. There are certainly some conditions in which the suprapubic operation would be the one of choice. In patients having had previous suprapubic cystotomy, the prostate would be best approached from above. Cases in which stone is present and the condition of the bladder unknown, but presumably with enlarged prostate, would perhaps be best exposed from above.

In emergency operations with urinary retention—immediate relief demanded, and neither time nor facilities for a careful examination—a suprapubic opening would be indicated. In case of suspected stone—none found by search, but with known enlargement of the prostate, especially when the bladder is large and dilated—suprapubic incision would give better bladder exploration. With the tendency to earlier operation, and therefore more frequent operation, on younger men, the preservation of the ejaculatory ducts becomes in a larger and larger number of cases, a matter of grave import. With many the patient's age is such as to make this a matter of secondary importance, or his sufferings are so great as to impel him to seek relief even with this sacrifice. The intravesical prostatectomy almost necessarily demands total enucleation. Conservative operation, with preservation of the ejaculatory ducts in younger men, seems hardly possible by the suprapubic route. The claim made, that the ejaculatory ducts are not torn in the operation as made by Bryson, Goodfellow and others, seems to me improbable.

In individual cases this may be true, but in the generality of patients these ducts must be torn away. In the operation as made by Young, it is certain that in many cases the ducts can be isolated in the small median strip of prostatic tissue left behind and preserved. This is an immense advantage, and must be kept in mind in this connection.

But the fact which appeals most strongly to me, is that in Young's operation the entire procedure can be carried out with definite knowledge afforded by sight and touch, and just so much or so little of the prostate as seems best, can be removed quickly and safely; vesical stone can be easily and safely dealt with, and perfect drainage can be assured. I believe it is becoming, and will become, the operation of choice in the vast majority of cases. As its advantages come to be more widely and better known, and better known practically, it will, I believe, crowd out more and more the other methods of prostatectomy.

A STUDY OF THIRTY CASES OF CHRONIC NON-TUBERCULOUS
JOINT-DISEASE OCCURRING IN ADULTS, WITH
SPECIAL REFERENCE TO SOME OF
DOUBTFUL IDENTITY*

BY HAROLD W. JONES, M. D., St. Louis.

Thirty cases of non-articular joint-disease of non-tuberculous origin, representing a variety of types, have been chosen for this report, for the purpose of submitting them to a clinical analysis and of recording the results of treatment. The majority of the cases have been under observation from one to two years.

GENERAL OBSERVATIONS.

The sexes were represented [equally, while the ages varied from seventeen to seventy-three years. Five had disease of the spine, three of the hip, three of the knee, one of the ankle, two of the elbow, and sixteen of the shoulder. Twenty-four were in good general health; of the remainder, a heart lesion was present in one, a hemiplegia in another, and a chronic nephritis in a third. Arteriosclerosis was present in several, and Heberden's nodes in three, in addition to the main joint lesion. Gonorrhea was frequently admitted in the histories, but its relation to the joint diseases was established in only three instances; syphilis had been contracted in two, in one of which it was apparently the underlying cause of the diseased joint.

The cases were arbitrarily divided, for the purpose of further study, as follows:

*Read by invitation before the American Orthopedic Association, Boston, June 8, 1905.

- I. Cases characterized principally by hypertrophy of the joint.
- II. Cases characterized principally by atrophy of the joint.
- III. Cases of undoubted joint infection (in some of which erosion of the articular surfaces could be demonstrated).
- IV. Cases of probable periarthrititis, in which infection was at least uncertain, and in which no permanent changes in the joint could be definitely shown.

Of the hypertrophic variety (osteoarthritis of Goldthwait) there were seven cases, three affecting the spine, two the hip (one of these a patient of Dr. Steele's), and one each the knee and elbow. In these the process of hypertrophy could either be shown with the radiograph or, in the spine cases, could be assumed to exist from the symptom complex, especially evidences of pressure upon the nerve roots, such as intercostal neuralgia, numbness, and one-sided sciatica. All cases were men between thirty-five and fifty years of age, none of them arteriosclerotic. The duration of the disease was from twelve years to a little less than one year, the average being about six. None of these cases had ever had an acute rheumatic attack: in all, the disease had come on gradually, and in all but one case the joints involved, were those subject to weight bearing, and therefore not easily protected from strain and constant irritation. In only one (the elbow) could a definite primary cause (syphilis) be assigned; trauma seemed to bear a definite relation to the disease in only one case. In all, save one, in which the spondylitis had been about the same for two or three years preceding the time the patient was first seen, the disease had been progressing pretty steadily for the worse, without any long periods of quiescence, hence any change following treatment may properly be ascribed to the treatment. This has been mainly the use of jackets in the spine cases, coupled with total rest in bed for several weeks in two, on account of sciatica: a spica and high sole in one of the hip cases, and the use of a cane in another; partial fixation of the knee in a leather support, and the administration of potassium iodid and biniodid of mercury in the case where the elbow was affected. But two of the seven can be said to be well, one of them in whom the spine had been affected the shortest time (fourteen months) has no symptoms and is wearing a jacket only for safety: the other, under antisiphilitic treatment continued with interruptions for a year, has had no symptoms for two or three months and has regained almost complete motion in the elbow, once considerably limited. A radiograph taken at the time of writing shows no absorption of the hypertrophied tissue, the appearance being about the same as in the one taken about a year ago: it may be questioned if this is a complete recovery, since evidence of disease still remains. Three cases (a spine, a hip and a knee) have been relieved, and in two (a spine and a hip) practically no change has taken place.

There is but one case in the series in which atrophy of the joint is the

main feature. This was a woman of thirty-six, the disease having existed six years; the left knee was ankylosed in the fully extended position, due to confinement in plaster for two years. There was no swelling of the soft parts. The radiograph shows a very marked and extensive atrophy of the joint and neighboring bone. The atrophic joint, commonly seen in the disease designated by Goldthwait as "rheumatoid arthritis, or "atrophic polyarthritis," since the latter term characterizes its main feature best, differs materially both in its clinical aspects and its skiagraphic appearances from the one just described. It is doubtful if this particular case represents a well established type of joint-disease; it is more reasonable to suppose that it is the end result of a chronic joint affection, the atrophy being explained by the total disuse. In this case forcible manipulation under anesthesia resulted in a movable joint with about 60 degrees of flexion allowed, even after such a long period of non-use.

In five cases infection could be pretty well established. Two of these were cases of spondylitis in young adults; one developing directly after childbirth and coincident uterine infection (probably not gonococcal) presented acute symptoms with a rigid spine, the patient recovering entirely, wearing a jacket and later a back brace, in four months, except for stiffness which gradually disappeared under graded exercises in about eighteen months. The other case occurred in a young Irish laborer and was at first thought to be osteoarthritis, considerable muscular rigidity of the lower spine without sciatica being present, pain having existed a little over a week. A jacket was applied, but in a week the patient had become so much worse that he was admitted to the hospital, where he died three weeks later of typhoid. That this was a typhoid infection of the spine seems quite probable, although infection at so early a period must be infrequent. A postmortem was not obtained.

The remaining cases of joint infection had definite relation to gonorrhea, one, however, following a sprain of the ankle in a man who had a urethral discharge for a number of years. The individual joints affected in the three cases were the hip, knee and ankle. Brisement force in the first two, for the relief of stiffness, accomplished with some difficulty where the hip was affected, since the pelvis could not easily be immobilized, resulted rather contrary to expectation, in restoration of a slight amount of motion to the hip, enough to be of some value, however; no motion whatever was obtained in the knee, although the malposition was corrected. The ankle-joint, the only case seen early enough to make operative intervention of any value, was opened, including the tendon sheaths, one or two erosions being found on the astragalus. Unidentified diplococci were seen in slides made from the tendon sheaths, but no organisms could be grown on culture media. Although this case has recovered without complete ankylosis, some stiffness is inevitable.



FIG. 1.—Hypertrophic arthritis of the hip.



FIG. 2.—Atrophic arthritis with absorption of cartilage and rarefying changes in the internal structure.



FIG. 3.—Normal left knee of case shown in Fig. 7 (for comparison).



FIG. 4.—Infectious arthritis of the knee with cartilage erosion, due to the gonococcus.

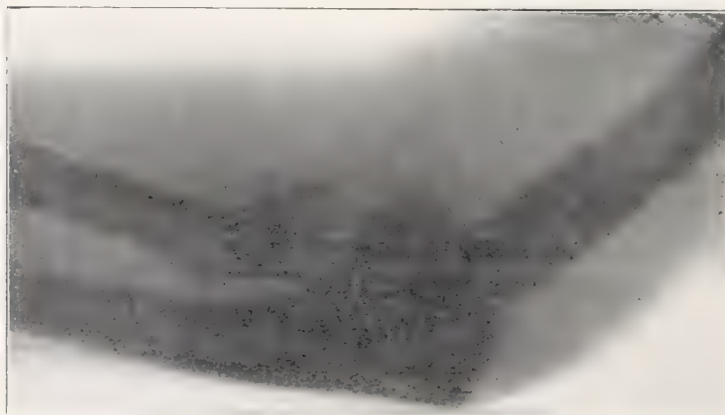


FIG. 5.—Hypertrophic arthritis of the elbow, due to syphilis, with formation of nodes.



FIG. 6.—Infectious arthritis of the hip with obliteration of the joint and ankylosis, due to the gonococcus.



FIG. 7.—Severe and long continued disease of the shoulder with fibrous ankylosis, due to deltoid bursitis of probable infectious origin. No joint changes with the exception of slight atrophy.



FIG. 8.—Hypertrophic arthritis of the knee, showing lipping of the articular surfaces and bony deposits in the tendon sheaths.

The remaining cases (seventeen in all) to which special reference is made in this paper, were not characterized by hypertrophy or by any considerable degree of atrophy of the joint, and in them infection could not be established as the cause. All of these involved the shoulder except one, that case being of the elbow. The latter occurred in a woman of fifty, the joint being swollen and sensitive without apparent cause or connection with any illness for several months, and without rise of temperature or constitutional symptoms. The radiograph showed nothing. Incision was suggested but refused. After a good many months of partial fixation and later massage and exercises, nearly normal mobility has returned. Of the sixteen cases where the shoulder has been affected, nine were women and seven men, the ages varying from thirty to seventy-three years; in two cases there had been a previous "rheumatic" attack. Since most of these were very similar in many of their aspects, and perhaps represented a definite disease, a brief description is given. The affection is an inflammatory disease of the shoulder characterized by severe pain referred to the anterior part of the joint; the point most painful to pressure seems to be the anterior portion of the head of the humerus, and is quite sharply localized. The pain is often radiating either down the arm or across the scapula. In the early stages, muscular spasm is very pronounced and sometimes the slightest movement causes extreme pain, severe at night, and interfering greatly with the patient's rest. This often goes on for months with gradual improvement and in time the pain disappears, although it may persist to some extent indefinitely. After a number of months in the untreated or improperly treated cases, and occasionally in those which are treated properly, a stiff shoulder results, sometimes the motion being slightly limited, but more often only a small portion of the normal. Most of these patients were seen after the acute symptoms had subsided, and they came generally for the treatment of disabling stiffness and vague pains. Physical examination in those seen early showed very little except the point of tenderness just mentioned, marked spasms of the muscles, and in one or two cases visible swelling. In the cases where the trouble had persisted some time there was still localized tenderness occasionally with generally a slightly appreciable thickening about the joint and sometimes extreme limitation of motion produced by adhesions and adaptative muscular shortening. In a few instances, a severe grade of muscular atrophy, mostly of the deltoid and subscapularis, was noted in addition, and in these the true nature of the trouble had been invariably unrecognized.

Of the sixteen cases four were in what might be called the acute stage, that is they were seen within the first few days or, at the most, not after two weeks had elapsed since onset, and where a good deal of tenderness and muscular spasm existed. Fixation of the arm in a Velpeau bandage, the use of a sling later on, and careful supervision for several weeks

longer, was successful in preventing subsequent disability. Five were seen after the trouble had existed from several weeks to two or three months, and where pain and muscular spasm still persisted. These were treated with a sling for protection but not by complete fixation, and in from three weeks to two months they were free from pain, the stiffness, however, remaining. In addition to these, seven cases were seen in which pain, at least to any degree, was absent, and stiffness only was complained of. Of these twelve cases taken altogether, where stiffness demanded treatment, nine consented to manipulation under anesthesia. Full surgical anesthesia was always given, the scapula being held firm, either by the operator or by the assistant, and the arm forcibly abducted and circumducted. In some cases the adhesions gave way easily, in others it required an almost dangerous amount of force to free the arm. Following this the arm was immobilized for twenty-four hours, after which manipulations were commenced, these being kept up in some cases twenty or thirty times a day, if the patient could endure it and no ill effects resulted. In a few days active exercises were instituted, such as hanging out clothes, swinging weights, reaching for things, etc. In but one instance did any severe painful reaction follow these measures, and this lasted only a week or ten days, which delayed complete recovery but little. Whether in this case manipulation under anesthesia was employed too soon and before the active disease had subsided, or whether it could be called a recurrence, is uncertain.

The final results in these cases have been particularly satisfactory: with increasing use of the arm, pain has disappeared, even excessive muscular atrophy has passed away and in from eight weeks to four or five months practically complete recovery has taken place. In a few cases a slight limitation of motion in extreme abduction has remained, but it in no way interferes with the ordinary use of the arm: in no case so far as is known has there been any recurrence of the trouble. In those cases where manipulation has been refused or thought inadvisable on account of the danger of anesthesia, two remain about the same after many months, while one has gained enough abduction by constant exercising during two years for good functional use, this being largely due, however, to increased scapular mobility. The cases in which the shoulder has been the seat of trouble represent a fairly constant inflammatory process of that joint, in most cases probably largely of the capsule, periarticular tissues, the tendon sheaths in the neighborhood of the joint, constituting a so-called pariarthritis, and although they are not difficult to recognize, the etiology and exact nature of the disease seems to be in some doubt. In a series of ten cases which were reported by Dr. Allison and myself," and which were described in detail, the etiology was thought to be always traumatic, although in some cases the injury must have been so trivial as to make its relation to the joint trouble uncertain. Since this report was published a number of additional and

apparently similar cases have been observed and in many of these cases trauma was not the cause. Why trauma, sometimes of a degree that would not affect an ordinary healthy joint in the slightest, should cause such a severe and long-continued joint disturbance unless some other factor be present, remains to be explained. As has been said, these cases were of both sexes and occurred in those of good health and those of poor health apparently indiscriminately, although they were commonest in those of middle life and beyond. That some were not cases of beginning hypertrophic arthritis, of the shoulder was at first questioned, but further study, especially with the radiograph, showed that none were of this type. It is quite possible that many of them were infections or toxæmias, but that the process was not of sufficient severity to seriously damage the joint is shown by the negative radiographic appearances and the practically complete recovery in every instance where the proper treatment was carried out. Moreover, the association of some of them with trophic disturbances of the fingers, with hyperæsthesias, with hemiplegia in one instance, and with a severe muscular atrophy taking place within a few months which occurred in several, gives room for doubt as to whether they are all of similar etiology even if resembling one another clinically and yielding to treatment with practical uniformity.

(Since this paper was read, Dr. E. A. Codman of Boston has demonstrated a number of similar cases as subdeltoid bursitis, and it seems probable that most, if not all, the cases reported as "periarthritis" belong in this category.)

SUMMARY.

In summing up, what are regarded as important or significant features in this collection of cases are submitted for any value or interest they may have. A consideration of what has been shown by Goldthwait,^{1,2,3,4} McCrae,⁵ Bradford,⁶ Richardson,⁸ and others has not been attempted in connection with this report, for obvious reasons.

That osseous hypertrophy occurred in these cases entirely in the male sex and almost exclusively in the weight-bearing joints is perhaps worthy of mention. The importance of syphilis as a cause of joint hypertrophy is probably not great, and the case reported is probably exceptional and not at all typical. Goldthwait¹ found as an apparent cause of osteoarthritis of the spine exposure to sudden changes of temperature, while Blodgett,⁷ in a series of eleven cases of morbus coxæ senilis, attributed the cause to occupation trauma. In the few cases I have had the opportunity of seeing, these causes have apparently played no important part in the production of the disease. The moderate success achieved in the treatment of these cases should also perhaps receive notice.

The single case of severe joint atrophy (of disuse) is regarded as an anomaly and not a disease type in any sense, although of passing interest. The imperfect results in the restoration of joint function, in

the gonococcus infections, especially those not subjected to early open operation, are of some significance. Finally I wish to direct special attention to the frequency with which the shoulder is apt to be the subject of a disabling joint lesion, the importance of trauma as a probable cause in many instances, and the satisfactory results of a logical method of treatment adapted to different stages of the disease.

REFERENCES.

1. Goldthwait: Osteoarthritis of the Spine. Transactions of the American Orthopedic Association, vol. xii, 1899.
2. Ibid: Osteoarthritis of the Spine; Spondylitis Deformans (second paper). Boston Medical and Surgical Journal, 1902.
3. Ibid: Infectious Arthritis. Boston Medical and Surgical Journal, vol. cl, 1904.
4. Ibid: The Differential Diagnosis of the So-called Rheumatoid Diseases. Boston Medical and Surgical Journal, vol. cli, 1904.
5. McCrae: One Hundred and Seventy Cases of Arthritis Deformans. Journal American Medical Association, 1904.
6. Bradford: Arthritis Deformans. Transactions of the American Orthopedic Association, vol. xv, 1902.
7. Blodgett: Report of Eleven Cases of Morbus Coxæ Senilis. Boston Medical and Surgical Journal, vol. cxlviii, 1903.
8. Richardson: A Clinical Report of Seventy-five Cases of Arthritis Deformans. Boston Medical and Surgical Journal, vol. clii, 1905.
9. Jones and Allison: Observations on a Series of Ten Cases of Disability of the Shoulder Joint. New York Medical Journal, 1904.

SOME CONSIDERATIONS ON THE TREATMENT OF DIABETES MELLITUS.

BY RALPH W. WEBSTER, M. D., Ph. D., Chicago.

According to von Noorden, diabetes is a disease in which the power of the organism to oxidize (*verbrennen*) glucose is pathologically diminished. This definition naturally excludes from discussion all conditions in which the metabolic disorder has to do with the improper handling of levulose, maltose, and other carbohydrates, by the organism. It likewise excludes those conditions in which a glycosuria follows the intake of large quantities of glucose or of starchy foods (so-called alimentary glycosuria), just as it excludes those disorders in which a glycosuria follows certain hepatic diseases in which a normal or abnormal amount of sugar is allowed to pass through the liver without being converted into glycogen. This latter is the so-called glycosuria of hepatic insufficiency, and has nothing to do with the true diabetic condition. I shall not attempt in this paper to go into the subject of the intermediate oxidation products of carbohydrates, because a proper handling of the points concerning glycuronic acid and its influence on metabolism, would in itself

¹Read before the Tri State Medical Society.

consume my time. I shall briefly point out certain facts concerning the physiology, chemistry and pathology of the carbohydrates, and then discuss a few etiological and pathological points regarding diabetes itself, before I consider the treatment, inasmuch as a proper understanding of these general facts is necessary before one can attempt a rational treatment of such a disorder.

The condition of diminished oxidation, or of improper handling of glucose, is manifested by a glycosuria, which of necessity is preceded by a glycaemia. A glycosuria must occur whenever the amount of sugar in the blood exceeds 3 P. M. We may thus have a glycaemia with resulting glycosuria from enteric, hepatic, pancreatic, muscular and nervous disorders, although the glycosuria following administration of phlorizin is probably of renal origin and is not accompanied by a glycaemia.

That a physiologic glycosuria exists, just as does a physiological albuminuria, is beyond dispute. The border line between the physiologic, alimentary and hepatic glycosurias on the one hand, and a diabetic glycosuria on the other, is hard to outline. In alimentary or in hepatic glycosuria, we find that the trouble may be directly traceable to a disturbance in the proper handling of the carbohydrate ingested. In true diabetes we have a disorder in the metabolism, not only of the ingested but also of the tissue carbohydrates. The milder types of diabetes seem to yield to treatment when the intake of carbohydrates is reduced to the point of tolerance, while the graver forms of this disease are not markedly affected, by the withdrawal of saccharine food. We see, therefore, that an alimentary glycosuria may merge into a true diabetes of the milder type, and later into one of the severer forms.

Time will not allow a discussion of the general metabolic processes by which the carbohydrate is absorbed, converted into glycogen, stored in the liver, oxidized into alcohol, glycerine, fatty acids, and carbon dioxide (not to say anything concerning saccharic, gluconic, glycuronic acids, etc.), and finally excreted. These processes are well known and need no elaboration.

Diabetes, then, being a disorder of the processes having to do with carbohydrate metabolism, Bosaquet to the contrary notwithstanding, it is wise to find out what the causal factors are, and what their significance and results. The etiology of diabetes is, in many cases obscure, but in others pancreatic disease, syphilis, infectious diseases, neurotic affections, constitutional diseases, such as gout or obesity, trauma, errors of diet, etc., act as exciting causes. With such an etiology various pathological findings are possible; hence it is difficult to judge just what abnormal conditions are accompaniments of, or causal of diabetes. The common classification of diabetes as nervous, hepatic, pancreatic, muscular, etc., is irrational, inasmuch as the so called hepatic diabetes for instance is not diabetic, but rather a simple glycosuria of hepatic insufficiency.

From the time of the discovery of diabetes, following puncture of the floor of the fourth ventricle by Bernard, we have granted to certain nervous troubles a prominent place in the causation of diabetes. By far the most important place is now given to diseases of the pancreas, following von Mering and Minkowski's discovery of experimental diabetes on removal of this organ. The frequent relation of disease of the pancreas to diabetes, as well as consideration of the function of this organ, has led many to the belief of a causal relation of disorders of the pancreas to diabetes. This relation is particularly noticeable in diseases involving the Islands of Langerhans. Yet, one must say that post-mortem findings do not in all cases bear out this assumption. In this connection I must mention the work of Cohnheim, showing the relationship of extract of pancreas to that of muscular tissue on splitting of carbohydrates. The effect of combined extract of muscle and pancreas in reducing diabetic glycosuria has been shown by Croftan prior to Cohnheim.

It must be remembered that the treatment of diabetes has in all cases a strong subjective factor. It is impossible to lay down rules which will be applicable in all cases, inasmuch as each case is a law unto itself. I shall, therefore, not attempt to dogmatize in this paper, but shall rather point out certain factors involved in the treatment of this disease with special reference to the dietetic management, leaving the prophylactic, etiologic and symptomatic treatment more or less untouched.

In the beginning we must have clearly in mind what points we wish to attack in our treatment of diabetes. In the milder forms of this disease the glycosuria, polyuria and polydipsia are the factors mainly involved, while in the graver cases the excretion of the acetone bodies with impending coma, challenges our efforts.

Regarding the glycosuria, we must remember that in true diabetes this symptom arises both from a disturbance in the metabolism of the ingested carbohydrate, as well as from an increased metabolism of the tissues of the body. It has been shown that 45 gms. of carbohydrate are elaborated in the metabolism of 100 gms. of proteid. Hence we see why in the graver cases, carbohydrate is constantly excreted on a carbohydrate free diet, owing to the two factors of improper handling of the carbohydrates of the tissues and the constant formation of carbohydrate from the proteid constituents, both of food and of the tissues. The glycaemia preceding the glycosuria is in all cases responsible for the polydipsia, inasmuch as the excess of sugar in the blood brings about a hypertonicity of this tissue, and as a result causes water to pass from the solid tissues into the blood. This interchange of fluid between two tissues separated by a semi-permeable membrane is a well-known fact, founded on the established laws of osmotic pressure. The kidneys, as the osmo-regulator of the blood, remove the excess of fluid and thus bring on a polyuria. The abstraction of the water leads to polydipsia and other symptoms attendant on drying up of mucous membranes and of skin. If, therefore,

we relieve the glycosuria we relieve the other symptoms of the milder form of the disease.

The most ominous symptom of diabetes is not the glycosuria, but the excretion of the acetone bodies, acetone, diacetic acid and B-oxybutyric acid. Not all cases show excretion of these bodies, but most do. It must be remembered that the less acetone and the more diacetic acid and B-oxybutyric acid are excreted, so much more doubtful becomes the prognosis. There are cases in which no acetone, only slight amount of diacetic acid, and large amounts of B-oxybutyric are excreted. It is such cases that put us to a severe test to ward off a certain coma and probable death. It is not my purpose to go fully into a discussion of the origin of these bodies, but I must take up a few points of their pathological chemistry, inasmuch as the therapy of diabetes is dependent on a knowledge of these factors.

For a long time it was supposed that sugars were not only accountable for the glycosuria, but also for the acetonuria and acidosis. In the advances of pathological chemistry, it has been shown that, instead of causing these latter symptoms, sugars in reality lessened them. This can be shown by the fact that administration of a certain amount of sugar will, especially in the milder forms of this disease, usually diminish an acetonuria in a patient from whose diet sugars were previously excluded. The exclusion of sugar from the diet forces the organism to utilize its proteid material and thus gives rise to an accumulation of nitrogenous metabolic products as well as to an increase in the acids of the body fluids which may aid in increasing an acidosis already present. With regard to proteids as the mother substances of these bodies, we must admit that their influence is to some extent, a double one. In the first place, proteids of food tend to diminish the acetonuria on account of their carbohydrate content, yet with a diet of excessive proteid, their influence is not of this sort. On account of the acids, particularly sulphuric and phosphoric, formed by their splitting, the proteids tend to increase an acidosis, while the excessive carbohydrate formed (45 gms. from 100 gms. proteid) by the hydrolysis of these proteids may greatly increase an existing glycosuria. These points, together with the fact that the products of nitrogenous metabolism may greatly increase the osmotic equivalent of the blood and thus lead to disordered cell-function, show us that proteids cannot be advantageous as an exclusive diet in diabetes.

Concerning the fats we must say that, although previously accredited with no power of influencing acetonuria or acidosis, today they are regarded as directly influencing these conditions to a great extent. This is true of the fatty acids and not of the neutral fats. If the contention of Castle and Lœvenhart be true, that a reversible action of lipase converts the fatty acids and glycerine, formed by a previous hydrolysis, again into neutral fat, then the influence of fats on the acidosis is small.

Yet, notwithstanding, we know from experience that increase in fat of the food will, almost invariably, increase an existing acidosis. Although sugar is formed from fat in the organism, this sugar seems to be readily oxidized, as no direct influence on the glycosuria is noted after increase of fat. It is entirely possible that in diabetes a marked disturbance of the normal fat metabolism exists, as Bosanquet advocates, and in consequence the fatty acids, formed by the hydrolytic splitting of the neutral fats, are not resynthesized. If this be the case, then we can readily see how fats may increase an acidosis. This influence of fats on the acetoneuria and acidosis is not long continued; hence we may usually use fats up to the limit of tolerance, although in some cases we must rather diminish than increase them.

A few points concerning the calorie value of food for a normal and for a diabetic, and then the field is clear for a more precise discussion of the dietary in the disease under treatment. The most exact and scientific way of constructing a dietary consists in estimating the calorie need of the person and then in giving him a diet which will maintain him in nitrogenous as well as in carbonaceous equilibrium. Whether a diet does or does not do this must be determined by an examination and comparison of his ingesta with his excreta. I have no time to discuss the important topic of nitrogenous equilibrium, but I must insist on its maintenance if a dietary is to be of its full value.

It has been shown that the average person needs 30-55 calories per kilogram and per day, depending on his mode of life and occupation. A certain balance of proteid, carbohydrate and fat is necessary for the maintenance of the body in healthy equilibrium, each person being a law unto himself. It is generally accepted that 1.3 to 1.5 grams of proteid per kilogram and per day are necessary, while the remaining values may be brought up by fat and carbohydrate according to the taste and desires of the patient. Usually the carbohydrates exceed the fats in amount, as the latter are not easily borne and as they "satisfy" earlier.

A diabetic differs, however, from a normal being, because he cannot assimilate carbohydrates to such an extent. In consequence his needed calorie value must be made up largely by increasing the proteids and fats and reducing the carbohydrates to the point of tolerance. It must be borne in mind that such a procedure may not result as we expect, owing to the influence of the proteids on the glycosuria, and that of the fats on the acetoneuria and acidosis. The most reliable means of following the metabolism of the proteids and fats, as regards their influence on the acidosis, is, of course, the ammonia excretion. The greater the excretion of this substance, the greater the acidosis and the more probable the approach of coma. An exact and theoretically, as well as practically certain method of combating and warding off the coma is the saturation of the system with NaHCO_3 , to neutralize the acids which are the causes of the comatose condition. This treatment may be used

either per os or intravenously, but never subcutaneously, owing to the liability of gangrene in the latter procedure. The diet of a diabetic must be so ordered that his strength shall be maintained and, if possible, bettered. Naturally the glycosuria and acetonuria must be the clues of the proper working of his dietary. In the milder cases it is usually sufficient to restrict his carbohydrate diet, but in the graver cases a strict carbohydrate free diet may be necessary with an occasional relaxation to a slight carbohydrate diet to offset the effect of the carbohydrate free diet in increasing the acetonuria and acidosis.

One of our earliest findings must be the tolerance of the patient for carbohydrates. This can be done by administering a definite amount of glucose (100 to 200 gms.) and observing the amount of excretion of the same. To maintain the diabetic in equilibrium, we must increase his dietary above that prescribed for a normal of the same height, age, etc., by the calories equivalent to his loss of carbohydrate in the urine. By this I mean, if a patient is given 150 grams of glucose and excretes 75 of this, then his diet must be increased beyond that normally given him, by 308 calories. In calculating the calorie value of fats, it is well to remember also that 9.3, the calorie value of 1 gram of fat in the dietary of a non-diabetic, must be reduced to 6.5 to 7 calories, to allow for the conversion of a portion of the fat into sugar and its later metabolism as such.

I must mention here that the addition of alcohol in its various forms is usually a convenient way to raise the calorie value of a dietary. However, care must be taken to exclude to a great extent such alcoholic beverages as beer, champagne and the sweet wines, owing to their large carbohydrate content.

I shall not attempt to give a list of articles of diet which should be used and those which should not be used, as no two cases are alike as regards the dietetic management. It would be irrational to say that no diabetic should use potatoes, for instance, as many thrive excellently under proper use of this staple article. I shall rather mention briefly some of the recent so-called cures, and discuss more or less in detail, the advantages of one of these—namely: The oatmeal cure of von Noorden. In times past various combinations of diet have been advocated for the treatment of diabetes. They are all based on the idea that one kind of starchy food is better tolerated than a mixture, and that, occasionally one carbohydrate, as *lævulose*, for instance, may be utilized, while another may not. Regarding the use of *lævulose*, we must remember that this carbohydrate is well borne by the diabetic organism for a time, but that after a certain interval, varying in each case, this *lævulose* appears in the urine in place of glucose, and we then have a so-called *lævulose diabetes*.

Such cures as I mention above are the potato cure of Mosse, the rice cure of von Duhring, the milk cure of Winternitz and the oatmeal cure

of von Noorden. This last I dwell on for a short time, as I have within the year had excellent opportunity of watching its effect under von Noorden in Frankfurt. The treatment consists in the administration of small amounts at frequent intervals (usually of two hours) of a gruel made of 250 grams of oatmeal, 100 grams of proteid, and 250 to 300 grams of butter with some water and a little salt. The calorie value of this mixture is higher than ordinarily needed, but it aids in maintaining the strength of the patient at a high standard. Recent work of Lipetz seems to show that the absorption is not complete, and, in consequence, the calorie value is not all available. The diminution of the glycosuria is sudden and marked, the acetonuria is reduced, and tolerance for carbohydrates is, in most cases, increased, while in others it is diminished. It is in those cases which show a large glycosuria and a large excretion of B-oxybutyric acid that this, as well as other cures, fails to give the results desired. Such cases show a remarkably low power of oxidation, and have, therefore, a very grave prognosis. This cure is by no means advocated as a cure-all, but does in a certain percentage of cases give wonderful results, and is, therefore, worthy of trial.

In summing up what I have said previously, I wish to impress on you the dangers and fallacies of an exclusive proteid diet as well as those of a diet containing a minimum of carbohydrate, and an excess of fat. A proper balance of these constituents is as vital to a diabetic as to a normal being and must be as accurately and as scientifically calculated as possible, if good results are to follow. The dangers of increased glycosuria and acidosis can best be fought by a properly regulated diet; hence it is only rational to exert our every effort to find out just what diet is best suited to the case under treatment. The old diet tables, which have done good service in the past, have succeeded not because of, but in spite of, their characteristics. To cut off carbohydrates to the point of exclusion may be, in some cases, absolutely homicidal, while in others it may be a necessity: so one can never say empirically what sort of diet will best suit a certain case. The treatment is long and tedious, but if scientifically carried out, will yield results which will be to the satisfaction both of patient and physician. Do not be discouraged if one line of diet does not bring the desired result, but rather try the harder to find out just what factors are at fault and remedy them. To do this you must bring to bear all your knowledge of composition of foods, of their absorption, metabolism and excretion. By so doing you will almost always find your reward in the betterment of the condition confronting you.

Just a word concerning the diagnosis of glycosuria, and then I have finished. Do not assume that you are dealing with an excretion of sugar if your Trommer's, Fehling's, Haines' and other reduction tests show a marked reaction of cuprous oxide. Always remember that such substances as glycononic and glycosuric acids, uric acid, kreatinin, etc., give

this reaction, and hence may lead you astray. It is better to rely on your fermentation and phenyl-hydrazine tests as a routine, than to be led into error by the reduction tests. These latter reactions have only a negative value and can never prove the presence of sugar to the exclusion of other reducing agents which are present normally and abnormally.

I will close my brief remarks by cautioning you to individualize each case of diabetes rather than to follow empirical rules. By so doing you will avoid many pitfalls which may later lead you into greater difficulties and dangers. Regarding the signs of approach of coma, I would advise a very careful examination of the urine for increased ammonia and an administration of NaHCO_3 whenever the relation of ammonia nitrogen to total nitrogen equals 10 per cent. or over. Such an excretion means an almost certain danger of coma and should be carefully watched.

Time will not allow me to go further into the many interesting and important factors in the treatment of diabetes, yet if I have succeeded in bringing out any new ideas and have advocated sufficient caution as to the individual treatment of each case of diabetes, then will I consider my time well spent and my effort well paid.

CONGENITAL ENTEROCYST, WITH REPORT OF CASE.

BY P. Y. TUPPER, M. D., St. Louis.

In the growth and development of the human embryo the changes in the arrangement of the intestinal tube are so radical and varied that no wonder is expressed when anomalies regarding its distribution are presented. That the original short straight tube representing the entire alimentary canal can, in a few months, become so elongated, twisted upon itself and subjected to such radical changes of form and position and yet with so few departures from the normal, is one of the greatest wonders of fetal development. The stomach not infrequently retains to a marked degree its original vertical position, presenting the clinical picture of one who vomits easily or whose stomach can be readily emptied by a reversal of position. It is well known that the infantile stomach, because relatively vertical, can be promptly emptied by turning the babe upside down. Again, an undescended cecum presents itself occasionally, giving us appendiceal disturbances high up on the right side, instead of at the normal site in the inguinal region. All degrees of deflection from the normal, varying from the simple ones mentioned to an occasional striking case of situs inversus, challenge our

*Read before the St. Louis Surgical Society May 12, 1905.

attention from time to time. These are abnormalities referable to faulty or arrested *distribution* of the viscera. More interesting and complicated, however, are those pathological conditions that bespeak an arrest or an abnormality in the *development* of these organs. As germane to this general subject I report briefly a case which for more than ten years challenged my interest and thought:

H. S., of Bowling Green, Missouri; female; born February 28, 1892. Parents healthy. No other children. No complications incident to pregnancy or delivery. At birth the child seemed strong and natural in every way except for the existence of a large sac, containing fluid, that occupied and protruded from the region of the inferior pelvic outlet. This mass, according to reports gotten from several physicians who examined the child at birth, was about four or five inches in its greatest transverse, and probably seven or eight inches in its vertical measurement. The skin covering it was thin and smooth, and the sac fairly tense with the contained fluid. On manipulation and pressure the fluid could not to any extent be displaced from the sac, nor were any symptoms referable to the central nervous system produced by such pressure. The skeleton seemed normal in every way except for the seeming lack of development of the lower portion of the vertebral column. The coccyx was absent, and also a small part of the distal portion of the sacrum, making the outlet of the pelvis unusually large. The sac protruded posterior to the rectum and forced this organ and the uro-genital tract, firmly forward under the pubic arch. Rectal exploration could not determine accurately the height to which the sac extended in the pelvis, and was helpful only in defining the position of the sac as being between the rectum and the posterior parietes.

When the child was three days old the cyst was tapped by Dr. Gregory in the presence of local physicians, and about three pints of a murky fluid were drawn off. This was given no chemical or microscopical examination. No apparent affect on the child was produced by the evacuation of the fluid. The growth of the child was uninterrupted, but the sac was tapped a second time during the first year of her life. After this there was no great reaccumulation of the fluid, the cavity continuing to discharge passively for a time through the opening last made by the trocar.

It was my privilege to see and examine the child many times during the first eleven years of her life. The cyst cavity eventually became almost entirely obliterated, the process of obliteration extending from above, downward. With increasing growth and development of the child the integument overlying the mass distributed itself in thick vertical folds and deep sulci, but in several places the original cavity persisted in the form of closed spaces containing fluid. One of these, in the right lower quadrant of the growth dorsally, as shown in the picture, was almost spherical and contained about an ounce of fluid at the

time of operation. Although repeatedly asked by the parents to operate for the removal of the pendulous mass, I did not do so because it seemed to occasion the child no discomfort and she was not sensitive regarding its existence. However, at eleven years of age the growth showed irritation from pressure and the friction of clothing, and the child became highly sensitive because of the disfigurement. It also interfered with the sitting posture unless the child sat perfectly upright. The semi-reclining position caused such pressure upon the growth as to be unbearable, and lying on the back could be tolerated only for a short time. On March 4, 1903, I removed the mass by making anterior and posterior flaps extending transversely across its base. At the site of section the original cavity of the cyst had been completely obliterated, and the tissues were quite dense and but illy supplied with blood vessels. A superficial infection occurred in the wound probably because of the proximity of the anal orifice, but it did not interfere materially with the recovery of the child.

Her physician, Dr. M. O. Biggs, of Bowling Green, Missouri, tells me now, two years after the operation, that the child is strong and well in every particular, and with the exception of a transverse scar just posterior to the anus, no evidence of the former trouble exists.

The following is the report of Dr. Carl Fisch who examined the specimen:

"The coccygeal tumor submitted to me for study (case H. S.) on March 6th proved to be a congenital tumor arising from proliferation of the blind end of the primary intestinal tract under participation of mesodermic tissue. In pathological parlance it must be called an entero-cyst.

"The tumor (to judge from the specimen submitted) was attached with a broad base; its transverse diameter is about $1\frac{1}{2}$ that of the longitudinal diameter, while the highest elevation over the surrounding skin surface must have amounted to 6 c.c. The base forms only the smaller part of the inferior surface, as the tumor tissue all around it overlaps considerably. The surface is very irregular showing a great number of larger and smaller fissures, suggestive of cerebral convolutions. It is everywhere covered with intact epithelium on which the openings of the cutaneous glands and hair follicles are seen. The consistency of the tumor is hard and tough. In one-half of the tumor an incision opens a cyst in the preserved specimen about the size of a small egg. It is empty and its inner surface is undulating and uneven. On cutting into other sections of the tumor a small number of smaller cysts with whitish grumous contents are discovered. Their inner surface is smooth. There is no connection between the large cyst and the spinal canal. The base of the tumor was examined for evidence of it, but without result.

"The microscopic examination of the tumor showed that the greatest part of its substance consisted of connective tissue types of fibrous tissue

and fat tissue. These two forms were interwoven in the most diversified ways. The fat tissue showed nothing abnormal, except that nowhere the typical lobulation was seen. The fibrous tissue varied in its character greatly: a great part of it was present in the form of very hard, callous masses, showing hyaline changes, and exceeding scarcity in cells. This could gradually be seen to change into loose areolar tissue masses, or into masses of actively proliferating fibrous tissue. In the latter, again, places appeared of altogether embryonic character, with very scanty development of the intercellular substance and small round cells. Elastic tissue was very abundant, and showed in some



FIG. 1.

places an excessive development. Muscle fibers, osseous tissue or cartilage could nowhere be found. In those foci where the tissue bore the character of active growth, in some places small aggregations of larger cells appeared, that now and then grouped themselves typically in the form of glandular cells. These cells were more or less cylindrical, but not bounded against the surrounding cells by a limiting membrane.

‘Towards the surface everywhere a zone was present, about corre-

sponding to the subcutaneous fat, and over it a stratum that, on the whole, corresponded to normal skin. There, too, in the corium, was observed a great extent of hyaline change; but the epithelium, hair follicles, sebaceous and sudoriparous glands appeared normal. The whole tumor was very scantily supplied with blood vessels; no large arteries were seen anywhere. The vessels themselves were of normal structure throughout.

"The lining of the large cyst was, in its superficial strata, in most parts destroyed. Only in the depths of the folds, now and then, some high cylindrical cells had remained, showing that originally the whole cyst had been invested with such an epithelium. Under the epithelium was found a layer of small round cells, in some places arranged in distinctly defined round groups, of considerable thickness, which were interrupted by bands of connective tissue. In some places here, some smooth muscle fibers could be demonstrated. The round cell layer was surrounded by a looser layer of connective tissue, that, in its turn, joined gradually with the massive hyaline fibrous texture.

"The smaller cysts showed the lining epithelium intact. It consisted of typical cylindrical cells, the nucleus situated near the base, and in some cases the appearance of goblet cells was very distinct. In these cysts the lymphatic sheath was very thin, consisting only of a very few cells. They, too, were surrounded by fibrous tissue.

"The arrangement of all of these different tissue elements was absolutely orderless (and such was the case in all of the different portions examined).

"To analyze the findings, the first thing to be considered is the presence of elements of mesodermic and entodermic tissue in an irregularly phantastic mixture. Although the former might be accounted for by irregularities of the growth in a benign tumor formation of the connective tissue type, certain characters speak even here against such an explanation, especially the behavior of the connective fibrous tissue, that in a fibroma never is found in this combination. Inflammatory causes, of course, are excluded. To this comes the presence of cells of entodermic origin, the lining of the cysts and the other epithelial structures. That they are entodermic is certain; that they belong to the anlagen of the intestinal tract is very probable, on account of the very close association, at least in the large cyst, with lymphatic tissue and unstriated muscle cells.

"Similar tumors have been described and been given the name of entero-cysts, meaning thereby that they arise from remnants of the usually altogether obliterated end of the primary intestinal tube.

"The tumor is, of course, benign and belongs to the great group of sacro-coccygeal growths, that derive their origin from normally obliterated portions of the surplus of the vertebral anlagen and of the neu-

renteric canal. It has nothing to do with the phenomena of rhachischisis and spina bifida."

The report of this case and the findings of the pathologist suggest a wide field of study, embracing those interesting groups of growths classed as teratomata, embryomata, dermoid cysts, pre-sacral tumors, etc. By common consent the term teratoma is not so fixed and distinct as that of embryoma, which embraces "those highly complex growths that contain tissues derived from all three of the given layers." In the former, however, one or more of the layers, generally the mesoderm or the entoderm, or both, may be represented in more or less of an order-



FIG. 2.

less arrangement. If in this complexity of arrangement elements of the three layers are found, then according to Warthin, the term embryoma is more desirable because more distinctive. According to Ziegler, Warren, Sutton, Payne, Warthin and others, the growth reported might be correctly classified under the general head of teratoma. The location, in close relation to the sacrum, is suggestive, as by far the larger number of teratomata are so located. The complex and confused mass of connective tissue, cellular elements, muscle and elastic fibers representing the mesoderm and the entoderm, also lends authority to this

classification. Conspicuously absent, however, are such structures as bone, cartilage, etc., that so constantly share in the makeup of teratomata wherever they are located, and which have given rise to a belief as expressed by Payne, that such incongruous masses represent "the remains of an abortive fetus, a not-separated twin, or a monster by excess."

Ziegler defines dermoids as "cystic tumors whose limiting membrane repeats more or less perfectly the structure of the skin and which contains structures that are the peculiar attributes of the skin, such as sweat and sebaceous glands, hair follicles, teeth, etc." The notable absence of this in the case under discussion, takes it probably out of this classification.

Although here there was an absence of the coccyx and also the lower portion of the sacrum, nothing either in the clinical picture or in the macroscopical or microscopical findings suggests in any way a spina bifida or a growth connected even remotely with either the vertebral column or with the spinal meninges.

Virchow in his Archives reports an interesting and unique case of a tumor pendulous from the buttock of a new born African babe. The tumor was removed and sent from central Africa to Virchow under the impression that it was a lipoma. Dissection revealed a central space in the tumor lined with dura mater, it evidently being the sac of a meningocele—the space between the cavity in the tumor and a sacral hiatus which certainly existed, having been obliterated. The true classification of the tumor was immediately fixed by the lining of its cavity, although it was not granted the pathologist to examine the vertebral column of the infant. In cases like the one reported this evening, the exact classification is not so readily made; however, the preponderance of evidence as shown in the pathological findings, points strongly to the belief that the tumor is a so-called enterocyst arising originally from the usually altogether obliterated end of the primary intestinal tube.

Recall the fact that early in foetal life this tube persists normally as a blind pouch, well removed from the parietes until reached by and made to communicate with, the inturned anal pit or fossa. In other words, until the growing together of the ectoderm and the entoderm has been accomplished. The failure of this coalescence results in the unfortunately well known imperforate anus. Piersol and Warthin point out that mesodermal and entodermal cysts owe their origin to the "persistence of foetal glands or ducts or to misplaced entodermal or mesodermal epithelial enlage." When arising from "snared off and persistent" portions of the primary intestinal tube they are properly termed enterocysts. In like manner originate the terms adenocysts, myelocysts, omphalo-mesenteric cysts, etc.

The genesis of these respective growths can only be determined from anatomical relations and their structure. When the tissue misplacement is but slight and when the anatomical structure still maintains distinctly

the mother characteristics, the genesis and classifications may be readily determined. Difficulty of classification is necessarily increased by the orderless arrangement of the individual elements so often seen, inflammatory processes and degenerative changes.

The study of the literature bearing directly on congenital enterocysts other than that referable to their microscopic makeup is most unsatisfactory. For years I have lost no opportunity to seek out all publications pertinent to the subject so as to amplify my scant knowledge in this direction, but search has been well nigh fruitless.

Stern, in reporting the first case of congenital sarcoma of the intestine, stated that with the exception of the one case of congenital intestinal carcinoma narrated by Ahlfelt, literature offered nothing on the subject of congenital tumors or cysts of the intestines. Tito Carbone has described congenital adenomata of the intestine, and also reported as congenital, a small fungus tumor of the ileum which on microscopic examination seemingly proved to be a mucous membrane polyp which had undergone carcinomatous degeneration. As early as 1855 Forster (*Handbuch d. Allgemeinen Pathologie*) published an important work on human malformations, and first gave a practical idea of sacral tumors by dividing them into unattached and subcutaneous parasitic growths and congenital sacral cysto-sarcomata. He expressed the opinion that a foetal remnant was the predisposing cause of so-called cysto-sarcomata, which remnant later disappears or cannot be traced. Later the discovery of Luschka in 1860 of the coccygeal gland gave rise to the theory or hypothesis that this structure, after undergoing degenerative change, is responsible for most mixed sacral growths. Two years later both Braune and Virchow gave credence to this theory.

In Max Borst's article on "Congenital Growths of the Sacral Region" (*Centralblatt fuer Allgemeine Pathologie*, 1898), undoubtedly the most exhaustive and valuable work yet published on the subject, no mention whatever is made of cases of enterocysts. The work, however, is a classic on foetal inclosures, degeneration of Luschka's gland, spina bifida and tertatoma.

EDITORIAL COMMENT.

THE YELLOW-FEVER EPIDEMIC.

The epidemic now decimating human life in Louisiana, causing untold damage to commerce and trade, bringing out at the same time in a vivid light, depths of human love and hatred and perversity, ordinarily concealed, differs at least in one point from the epidemics of identical character of former years. At this time and in the United States, an epidemic of yellow-fever is an anachronism; it should not occur in a country that has given to the world the etiology and prophylaxis of this disease, in a country that by applying this knowledge has efficiently exterminated it in one of its hot beds. That such an epidemic should gain a start can be excused; that it is allowed to advance to dimensions not controllable is unpardonable and will always remain a black line in our sanitary history. There is very little to be said about the epidemic as such; it runs the course of many others that have passed by. It is in a stage now that hardly will be checked by artificial means, but that as to subsidence will most likely only be influenced by the seasonal changes.

Our present knowledge about yellow-fever had existed for several years; in its application the main weight was laid on prevention. There is hardly another infectious disease in which the means of prevention are so clear and so simple and at the same time so accessible everywhere and under all circumstances. If these means are used, the existence of an epidemic is impossible. (This is an "universal negative," we know, but it is deducted from evidence as exacting and binding as mathematic deductions. The mathematic correctness of this evidence can be assailed only by contradictory evidence for the opposite, not by theory and flighty generalizations.) This was known when the first case was discovered July 21st, the so-called date of the beginning of the epidemic. If at this time the proper means had been used, no epidemic would have occurred. If this had been the first case, even with the insufficient attempts at that time, the epidemic would not have been allowed to become so rampant as it is today. The essential point lies in the fact that the case of July 21st was not the first case, but only one of perhaps a great number that remained unknown. The proof of this lies in the statement that on July 25th there were 154 known cases; up to July 31st a total of 304 cases. The July 21st case could not have caused the appearance of new cases before the 31st of that month. All of those 304 cases, therefore, were caused by an infection on or before July 21st. As the infection can only be carried by a mosquito ten days after he has ingested the blood of a yellow-fever patient in the first three days of the disease, the existence of yellow-fever cases in New Orleans on July 11th, and most likely before this date, is clear. Three hundred and four cases cannot possibly be infected by the same mosquito, not even by the

total number of mosquitoes that have bitten one and the same patient. There existed, therefore, a number of yellow-fever cases before July 11th. Since it is not probable that all of these cases were freshly imported, some of them at least must have been infected by infected mosquitoes *in loco*. That means that yellow-fever was present in New Orleans a long time before the first case was found. On July 21st the disease had already taken an epidemic character.

Where lies the fault that such a disaster could be permitted to occur? Ignorance, indifference, negligence and deceit worked together. Occurring primarily among a low class of people, the disease was not recognized, although even at the end of June or the beginning of July it is unthinkable that not one of the cases existing then should have been seen by a physician and at least have aroused his suspicion. Action of the authorities would have cut short its course. It is impossible to think that no suspicions should have been aroused during the time up to July 21st; indifference and negligence allowed the most favorable chances to escape. When the authorities became aware of the danger, they did what they could, but were counteracted by the same factors until the Public Health and Marine Hospital Service took the reins into their hands. The effects of this step, at least for the city of New Orleans, will be felt in two or three weeks; in fact, practically in New Orleans the epidemic now is under control.

The epidemic teaches an important lesson, not only in dealing with yellow-fever, but also for other epidemic infectious diseases. As here, so in other places, only the hand of an authority, that enforces rules for the *salus publica* irrespective of the individual and can enforce them, will be effective. Individualization, regard of so-called individual rights, will unavoidably lead to failure in such conditions. The public must be taught that a command by this authority allows of no contradiction, that they will be forced, even by infringement upon their ideas of liberty and independence, to obey. Practically, it is to be hoped that the southern disaster will lead to a change of the authoritative character of the hygienic and sanitary institutions of our country, a character that is realized only in a few states and cities to a certain degree. The first demand is that they be freed from political influences. The second is, that by their influence the public is prepared and instructed to act as they must know is necessary in conditions like the one discussed here.

The medical profession, too, can contribute a great share to the success of this attempt by assisting the authorities by careful observation and diagnosis. There is no doubt but that in this epidemic clear cases have been diagnosed wrong, intentionally or unintentionally. A skeptic attitude about the modern teachings on yellow-fever should also be avoided. Everybody is aware that our knowledge is and always will be limited by the capacity of our perceptive organs; everything we find and explore must necessarily have a human face. When we use words like

positive and absolute, we always know that their meaning only goes as far as our external or internal experience reaches. We are aware that it is possible that any axiom of today may change its face tomorrow. What we call positive or impossible are things that to our experience always show the same condition; we call them so unless someone clearly demonstrates that another explanation is more fitting. Science has nothing absolute, nothing true; it is so only of human nature and creation. We fare well with it as it is, due to the intrinsic feeling of science that everything is bound to show a different face if we find a means to look closer. This remark is made with regard to some medical literature in connection with the New Orleans epidemic, in which with high-sounding words the modern views are not discredited, but put in the light of not being sufficiently evidenced. Such views exist in the lay-public widely and a great deal of the foolish and barbarous quarantine measures is caused by it. If medical men contribute to such feelings they ought at least to show some form of evidential material. Let them go to Havana and inquire of the populace whether the mosquito theory has not been proved true, *true* in the way in which we call things true, to men in their plight. By the Cuban purification from yellow-fever our country has given a proof of its truth that, unfortunately, it has not been able to confirm in its own confines.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

Carcinoma.—KOENIG, Berlin (*Deutsch. Med. Woch.*, 1905, No. 19), presents a clinical study of carcinoma, based upon his own observation, and comes to the conclusion that it is a disease which can develop wherever there is epithelium. Primary carcinoma occurs only where there is epithelium. It must be considered, for a time at least, purely a local condition. He lays some stress upon this point, because the laymen believe that carcinoma is a general affection and at once incurable. It is impossible to say just how long carcinoma may be considered a local disease, and for that reason it should be removed as promptly as possible. A large number of carcinomata, even after they have passed the local stages, are still curable, if only the surrounding glands are involved. Metastases preclude a cure. He considers cachexia the result of a breaking down of the carcinoma. There is such a thing as disposition to carcinoma. Old age may be considered a general disposition. Special dispositions are heredity, trauma, ulcers, increase of the functional action of a gland. He does not believe that carcinoma may be transmitted from person to person; never having observed, for instance, that one who nurses a case of carcinoma, has ever developed it. Though he believes that carcinoma may be transplanted, he is not aware of a case ever having occurred through inoculation. Surgeons often inoculate themselves with syphilis and tuberculosis, but he has never heard of a case in which they had infected themselves with cancer. He does not believe that carcinoma is steadily increasing, but rather that the apparent increase is due to more correct methods of keeping statistics, and to more exact methods of diagnosis.

The cause of carcinoma is still unknown, but the author feels convinced that it is a specific one. The surest treatment is radical operation, inasmuch as surgical interference cures about 30 per cent. of the cases. The Roentgen rays have produced a cure in a large number of small carcinomata, and have given relief in large, inoperable ones. If one desires to use it in preference to the immediate use of the knife, it is best to apply it in small skin carcinomata and in inoperable cases.

Tetanus: A Preliminary Report of a Statistical Study.—ANDERS and MORGAN (*Journal Am. Med. Association*, July 29, 1905).—The object of this study is to demonstrate the incidence of tetanus in this country, and to give a brief review of all collectable cases, with a view to establishing our knowledge of the disease as it occurs in this country, as well as to adduce measures of prophylaxis and treatment. The total of 1,200 cases were collected, both through a perusal of the literature and correspondence with hundreds of observers. Convincing proof is given that every case of the disease is the result of the introduction of the tetanus

bacillus, and the so-called idiopathic or rheumatic tetanus does not exist. The sections of the country in which tetanus are most frequent are northern New York, along the Hudson valley, southern Pennsylvania, Virginia, Georgia, Louisiana, Indiana, Illinois and southern California. Cases of tetanus were plentiful after the battle of Gettysburg and the battle of the Wilderness.

It was found that the greatest number of cases occur in July. About 39 per cent. of all cases occurred between the fifth and fifteenth years of life, 24.9 per cent. between the fifteenth and twenty-fifth years, 14 per cent. between the twenty-fifth and thirtieth years, and a very small percentage beyond fifty years. About 79 per cent. of all cases reported occurred in males.

Nicolaier's bacillus was the causal factor in every case. The germ occurs in garden earth, dust, manure, the intestines, and discharges of animals. The usual portal of entrance is by open wounds. All tissues are susceptible to the infection, though the extremities are the common sites of the infection. There is much evidence to show that tetanus is directly transmissible, and may give rise to epidemics.

A number of interesting clinical features have been noted; for instance, trismus has been so great as to crush the teeth down to their roots; fractures of the spinal processes of the vertebræ have resulted from the severe convulsions, etc.; 22 per cent. showed an incubation period of five days or less, with a mortality of 59 per cent.; about 45 per cent. in from five to ten days, with a mortality of 63 per cent.; about 20 per cent. gave an incubation of ten to fifteen days, with a death rate of 42 per cent.; and about 10 per cent. in from fifteen to twenty-five days, with a mortality of 40 per cent. The highest mortality occurred on the seventh day.

The measures employed in the treatment of tetanus have been many and varied, and may be considered under local and general measures. Under local measures, may be considered the treatment of the wound; under general measures, the various palliative treatments and the use of antitoxin. As a means of prophylaxis, the serum has been fully tested, both in America and abroad, and there is uniform agreement that "antitoxin does protect" in every case. The present status of the serum question leaves no doubt that, when given during a well-developed case of tetanus, antitoxin does not have any appreciable beneficial effect, neither the mortality being reduced, nor recovery hastened thereby.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

Some Remarks on Cases Involving Operative Loss of Continuity of the Common Bile Duct.—WILLIAM J. MAYO (*Annals of Surgery*, July, 1905).—In the Rochester experience of 1,100 operations for gall-stone disease and other associated maladies, there have been seven cases of com-

plete loss of continuity of the common duct. These seven are reported in detail and the reader is referred for the minutia to the original article. Several deductions which Dr. Mayo has drawn will be of undoubted value in guiding the less experienced surgeon in the management of a similar condition, which must be regarded as a comparative rarity in the practice of anyone else. The common duct may be directly united end to end by through-and-through catgut sutures, though supporting sutures should be used in surrounding tissues, and one side of the duct should be left open for drainage. The hepatic or common duct can be anastomosed directly into a portion of intestine covered by peritoneum. If the duodenum is used it should be drawn to the right and fixed by tension sutures. Drainage should never be used directly against the line of sutures, and should be covered by rubber tissue at all events. The seventh of this series of cases which had not been heretofore reported is one of particular interest. The gall-bladder had been removed at the primary operation and the common duct opened for the removal of stones. Later the common duct shrunk to such an extent that spontaneous discharge of bile took place through the old wound. The secondary operation consisted in finding the proximal end of the hepatic duct and anastomosing it into the duodenum with two rows of sutures. This healed perfectly and there was no leak and the patient was soon discharged from the hospital completely cured. This case certainly goes to show that almost anything can be accomplished with these minute and delicate structures in the hands of experienced and ingenious men.

The Consideration of Wounds of the Thoracic Duct.—VAUTRIN (*Revue de Chir. de Paris*, July, 1905).—Four observations of this kind have convinced the author that the lesion is usually by no means a dangerous one. One of the reasons why it is very frequently injured, in fact more frequently than generally supposed, is that its position is not always constant and is not capable of the same protection given the blood vessels and nerves. The various authors have failed to describe anything like a uniform picture as far as the anatomy of the part is concerned, and, indeed, it does not, as many suppose, empty from a single trunk into a vein, but is multiple and the different branches may empty into almost any of the deep veins of the neck. There are a great many communications in the chest between the thoracic duct and the veins, hence it comes about that an obstruction in the neck frequently does not lead to serious consequences as one might at first think. Of course the various pathological lesions in the cervical glands are likely to lead to changes in the walls of adjacent lymph channels, consequently when we pull upon a structure situated low down there is great danger of tearing the ducts. After such an injury there is sometimes the loss of several quarts of fluid a day, this being particularly accentuated after meals as one might suppose. Such a patient rapidly becomes emaciated and loses strength, is fearfully hungry, exceedingly thirsty and passes less than the normal quantity of urine. The treatment consists in compression in most instances, by ligature if the injured vessel can be isolated, or by lateral suture as practiced by Harvey Cushing. End to end suture is hardly within the range of possibility.

A New Position for the Patient During Appendicitis Operations.—FOERSTERLING (*Zent. f. Chir.*, No. 20, 1905).—Professor Schlange has suggested that the patient be placed not upon the back, as usually done, but turned half way upon the side. This practice has been repeatedly followed in his clinic, and it has been found that the viscera sink away from the wound to such an extent that the operator is not troubled by the tendency to prolapse. The pressure thus produced is not sufficient to break up adhesions, although it is of considerable help. The operation in the interval is rendered easier in this way, and indeed the author has found it an improvement even when the appendix is fastened down in the pelvis. We have offered us hereby the advantages, at least in part, of the Trendelenburg position without its accompanying dangers.

Scopolamin-Morphin as an Adjuvant in the Administration of General Anesthetics.—SEELIG (*Annals of Surgery*, August, 1905).—This combination has been tried in sixty-five cases and has proved particularly pleasing without showing a single ill effect. The author gives very definite reasons for using each of the drugs mentioned, these being scopolamin and morphin preliminary to inhalation of ether. Of the sixty-five cases only one vomited or retched while on the operating table, 67 per cent. did not vomit at all, and of those that did vomit one-third did so only once. Only in two cases was nausea at all pronounced. An astonishingly small amount of ether is required for an operation of ordinary duration when these preliminary injections have been made. The morphin lessens the susceptibility to shock, the scopolamin aids in this by raising the blood pressure and the combination, where a few whiffs of ethyl chloride are inhaled in addition, renders the patient most easily and quickly susceptible to the action of the ether.

Cyst of the Transverse Mesocolon Simulating Pancreatic Cyst.—HARTMANN (*Bullet. et Mem. de la Soc. de Chir. de Paris*. Tome XXXI, No. 23).—The patient, a woman of thirty-six years of age, had complained of abdominal trouble for about a year. This consisted of sudden attacks of pain in the epigastrium with vomiting, the pain radiating toward the left shoulder. She had had a little fever and diarrhea. Physical examination showed a round tumor in the upper right abdomen. This could not be distinguished from the liver and was slightly sensitive to pressure. With the abdomen open the omentum was seen to cover the mass, which lay to the right of the stomach and duodenum and above the colon. It was punctured, the fluid removed and the cyst wall sewn to the edges of the abdominal incision. Microscopic examination of the tumor showed its walls consisted of tissue similar to the walls of the lymph channels, hence the author is convinced it was simply a lymph retention cyst. There were no post-operative troubles and the patient was dismissed a few weeks afterward without a fistula.

Post-Operative Prolapse of the Abdominal Viscera.—MADELUNG (*Archiv. f. Klin. Chirurg.*, Band 77, Heft 2).—The author has collected 144 cases from literature and has added to these seven from his own practice. The very interesting fact is shown that an abdominal wound has burst

open at almost any time up to and including seventeen days after laparotomy. This has happened to both sexes, to patients of every age and after all sorts of abdominal conditions, and even after explorative incisions where nothing was found. It is reported as far back as 1844 and occurs at the present time with all our boasted excellence of technique. As one might suppose, low incisions have been most productive of this kind of trouble, and median rather than lateral incisions have conduced to it. A patient, who has been several times operated upon in the same place, is most likely to have it occur, and the critical time is shown by statistics to be about the eighth or ninth day. One might at first think that absorbable suture material had been responsible for this. This is, however, not the case, since it has occurred after the use of every kind of suture material and after every form of closure; indeed, no kind of wound reunion seems to give an absolute guaranty against it. It occurred in thirty-nine of the cases within twenty-four hours after the removal of the stitches, so it is fair to suppose these had been taken out too early. Especially the thin abdominal wall predisposes to this accident, while coughing seems to have been the particular factor which immediately brought it about. Vomiting, too, and pressing at stool have done their share. A generally depleted patient is, of course, more than any other exposed to this sort of trouble, although it has happened when there was no visible evidence of interference with healing, although in many instances suppuration has produced the accident. In a number of cases it was impossible to restore the abdominal contents, and in several cases this was not even attempted, though strange to say many of these patients have not died. One is astonished to learn that the abdominal contents have in many instances gradually shrunk back into the cavity after being enveloped in gauze for quite a number of days, and that the patients have fully recovered; and indeed such wounds in the abdominal wall have healed so firmly that not even a hernia has been apparent later. Not one-third of all the patients in whom prolapse has occurred have died, hence the accident is not quite so serious as commonly supposed.

Surgical Physiology.—CRILE (*Bulletin of Johns Hopkins Hospital*, August, 1905).—This is one of the most interesting and ingenious articles that has appeared in recent surgical literature. It is so replete with general information that a review must necessarily be of far less value than a perusal of the article in the original. Crile takes up the manifestations of inhibition and obstruction to respiration in a way that is valuable to the operator. He is especially happy in his suggestions regarding the anesthetization of abdominal cases and of cranial cases with heightened blood pressure. The well known nerve blocking is given due attention, as is the matter of respecting the physiologic resistance to the amount of surgery to be done. Blood pressure in the various forms of infections is most interestingly dealt with, as is the surgical physiology of the heart and lungs. The author has succeeded in causing the heart to beat again after it has been stilled from six to twenty-four minutes, something which was formerly thought absolutely impossible. He has kept up the heart beats for eleven hours in an animal whose medulla had been removed. He concludes his article with a most unique series of suggestions for other workers in this interesting and valuable field.

DIAGNOSIS.

IN CHARGE OF

A. E. TAUSSIG, M. D.

A Simple Method of Staining the Spirochaete Pallida for the Diagnosis of Syphilis.—M. OPPENHEIM and O. SACHS (*Deutsch. med. Wochenschr.*, 1905, No. 29).—Some months ago Schaudinn demonstrated the presence in all primary and secondary syphilitic lesions of a new micro-organism. The latter is a so-called spirochaete, a long thread-like structure with several cork-screw convolutions, very slender and staining very palely. While there is good reason to think of the possibility of this micro-organism being the infectious agent in syphilis, all positive proof is still lacking. Nevertheless, its invariable presence in early syphilitic lesions, and the fact that as yet it has not been found elsewhere, have lead to the attempt to utilize its detection for diagnostic purposes. Hitherto the methods of staining the spirochaete have been complicated and required special training. Oppenheim and Sachs, however, use an extremely simple method, which they say has proven entirely satisfactory and reliable. The scraping or the discharge from syphilitic lesions is spread in a very thin layer over clean cover-glasses, without fixation, these are covered with a carbol-gentian-violet solution (100 parts 5 per cent. carbohc acid, ten parts saturated alcoholic solution of gentian violet) and warmed over a Bunsen flame until steam is formed. They are then very carefully rinsed in distilled water, whereby the red blood corpuscles are partly decolorized, partly washed off; then dried between filter paper and mounted. The spirochaete pallida stains a delicate but distinct blue and can be recognized without trouble,

Quantitative Uric Acid Determination.—SURVEYOR (*Brit. Med. J'l*, No. 2323).—The urine is freed from pus or albumen, if present, by boiling. It is then made faintly alkaline, boiled, acidified by means of hydrochloric acid, poured into graduated centrifuge tubes and frozen solid by means of immersion in a freezing mixture. The tubes are then centrifugated until the urine has become entirely fluid again. The uric acid will be found as an opaque mass at the bottom of the centrifuge tube and its quantity can easily be estimated.

While simple and convenient for clinical purposes, there is reason to fear that the same uncertainties inhere in this modification as in the other hydrochloric acid methods of determining the percentage of uric acid in urine.

The Diazo Reaction in Diseases of Children.—N. KEPHALLINOS (*Wiener med. Wochenschr.*, 1905, No. 23).—In the children's clinic at Graz, the author has tested for the diazo reaction in the urine of 6,000 cases. His most interesting observation was that cases of lymphatic tuberculosis, showing the clinical picture of pseudo-leucemia, always give a positive diazo reaction. The reaction was always negative in rhachitis, anemia,

true pseudo-leucemia, hemophilia, nervous disorders, erysipelas, pertussis, malaria, rubella, mumps, acute articular rheumatism, sepsis, influenza and dysentery.

Early Bacterioscopic Diagnosis of Pulmonary Tuberculosis.—BLUME (*Hospitaltid.*, No. 25; *Deutsch. med. Wochenschr.*, No. 30, 1905).—In several cases of pulmonary tuberculosis, with slight or absent physical signs, and in which both cough and sputum were lacking, the author was able to demonstrate the presence of tubercle bacilli in fragments of mucus obtained by swabbing out the apparently healthy larynx.

Significance of Leucocytosis in Cancer of the Liver.—TONARELLI (*Riform. med.*, No. 27, 1905; *ibidem*).—The blood of patients suffering from hepatic cancer is characterized by a leucocytosis, an increased proportion of the mononuclear cells, a diminished number of red corpuscles and a lessened percentage of hemoglobin. The presence or absence of none of these changes is alone definitely decisive for the diagnosis of hepatic carcinoma. Where, however, we have some hepatic disease, and have at once a marked leucocytosis, an increased proportion of mononuclear cells, great oligocythemia and oligochromemia, the diagnosis of cancer of the liver is fairly certain.

THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

Antithyreoidin-Moebius in a Case of Basedow's Disease Complicated with a Psychosis.—LOMER (*Munch. med. Wchschr.*, 1905, No. 18).—The thyroid serum of Moebius (antithyreoidin) is the blood serum of sheep obtained six weeks after thyroid extirpation. This was prepared for the author by Merck and preserved with 0.5 per cent. carbolic acid. The case reported was one in which a dementia had existed for some time, and in which Basedow's disease developed, with a moderate goitre, marked exophthalmus and Graefe's sign, tremor, and tachycardia of marked degree.

Treatment was begun with 0.5 c. c. antithyreoidin three times daily, and this quantity was increased 0.5 c. c. daily until 4 c. c. were taken three times a day. This dose was continued for three days and then reduced to 3.5 c. c. The effect of treatment was soon apparent in an increase of the strength of the pulse, a reduction in rate, diminution, though not a total disappearance, of the tremor and exophthalmus, disappearance of Graefe's sign. The mental condition of the patient improved greatly. The goitre was not reduced in size. All symptoms and signs returned when the serum was discontinued, but Lomer, nevertheless, considers the remedy a useful symptomatic measure.

Pneumococcus Serum (Roemer) in Croupous Pneumonia.—KNAUTH (*Deutsch. med. Wchschr.*, 1905, No. 12).—The pneumococcus serum (Roemer), made by Merck, is a polyvalent serum, and is obtained from several species of animals which have been immunized against a number of strains of pneumococcus. Knauth was encouraged to try this serum by the strikingly favorable results obtained in the Wuerzburger eye-clinic in pneumococcus infections of the cornea. Seven cases of croupous pneumonia, of marked severity, were treated. The serum was injected subcutaneously in doses of 20 c. c. at intervals of from six to twenty-four hours, and on the second to as late as the seventh day. All cases recovered. The serum produced no untoward local or systemic effects of any kind. Prompt improvement was noted in the pulse, respiration, fever, character of the sputum, and especially in the subjective condition of the patients. The fever disappeared only once by crisis, usual by lysis, with little sweating and no symptoms of collapse.

The Cure of Leprosy.—DYER (*Med. News*, 1905, July 29, p. 199) has experimented extensively with various remedies, but has obtained results only from the following: Strychnine; antivenomous serum, chaulmoogra oil and chlorate of potash. He reports ten cases which have remained free of symptoms and signs from one to seven years. He is firmly of the conviction that leprosy is curable, certainly in all the early stages. He formulates the following essentials in the treatment:

"1. Full diet, restricting only indigestible foods, is indicated. The disease seems in no wise to be affected by fish or any other particular article of diet.

2. Baths are essential in the treatment. Hot baths twice a day, with or without soda, are effective.

3. The patient needs tonics, febrifuges, and should be watched for intercurrent or complicating diseases.

4. Strychnine is a *sine qua non* in the treatment of leprosy.

5. When chaulmoogra oil is given, it is better endured before meals than after. It is best taken in capsules, in hot milk, or in milk of magnesia. The dosage should be begun small, say 3 drops, and increased every second or third day until as much as 120 to 150 drops of the oil are taken at a dose. At times it is advisable to give the oil in pill form. This can be done either combining it with extract nux vomica and ordinary excipients, or a very effective way is with tragacanth and common soap.

6. Above all things, individualize the patient. Watch for improvement, and if it does not show in three months, wait six months or longer.

7. When all evidences of the disease are gone, insist on a continuance of treatment.

Intravenous Injection of Ergot.—SOLLMANN and BROWN (*J. Am. Med. Assoc.*, 1905, July 22, p. 229), have made an extensive experimental study of the effect of ergot on the general circulation, which has led to results, as far as experimental evidence goes, that contradicts time-honored clinical observations. Using dogs, and injecting from 0.02 gm. to 0.04 gm. per kilo of dog (the equivalent of a normal therapeutic ergot dose

in man), they reach the following conclusions: "The typical effect of the intravenous injection of ergot consists in a large and abrupt fall of blood pressure, followed by a prompt recovery, and generally by a slight and short rise." This change in blood pressure is due only in the slightest degree to vasomotor influence, but mainly to changes in the force of the heart-beat. The rate of the heart is little changed. "There was no evidence of strong constriction or of a high rise of blood pressure. . . . The action of ergot is independent of the dose within wide limits. . . . Large doses depress the vagus centre and the vasomotor endings. It is not acutely fatal, even in very large doses."

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

About Connections, Transitions and Transformations Between Epithelium, Endothelium and Connective Tissues in Embryos, Lower Mammals and Tumors.—C. KROMPECHER.—(*Ziegl. Beitr. z. Pathol. Anat.*, Vol. 37, Heft 1).—In his former work on the basal-cell carcinoma of the epidermis Krompecher had noticed curious and close connections between the proliferating carcinoma cells and the surrounding connective tissue. Analogous observations on *melanomata*, certain tumors of the ovary, mamma and prostate and especially on mixed tumors or so-called endotheliomata of the *parotis* led him to bring these tumors also under the head of basal-cell carcinomata. He has then widened his investigations and now presents his results with the following *conclusions*: He ascribes to the basal-cell carcinoma an intermediate position between those carcinomata consisting of well differentiated cells, and the sarcomata. They are, in regard to their origin from the epithelium, of epithelial character, but their other characters remind very strongly of sarcomata. Krompecher insists that in naevi as well as in the basal-cell tumors, is found a separation and isolation of embryonic cells that under these conditions cannot be differentiated from certain connective tissue cells. In addition to this, he alleges, on the basis of embryologic and comparative histologic material, that there exists an intimate connection between normally placed epithelial cells with the underlying connective tissue, and maintains that in man, the basal-cells emit definite processes into the connective tissue. Having thus established his "transition-tissue," he proceeds to pronounce a thesis like this: It is possible that a transformation of epithelial cells into connective tissue cells occurs in the adult organism under normal or pathological conditions. He tries to confirm this thesis by referring to the analogous relations of epithelium to endothelium and the (as yet not proven) changeability of peritoneal and vascular epithelium into connective tissue.

Krompecher's paper is radical in its conclusions and will arouse a long and spirited discussion about the question, whether ideas, now believed fundamental in anatomy and histology, must be abandoned. There is no doubt that several investigations lately published, have on many sides, even before Krompecher, shaken, to a degree, the belief in the specificity of the different tissue formations in the animal organisms.

About the Paget Carcinoma (Paget's Disease).—HUGO RIBBERT.—(*Deutsch. Medic. Woch.*, 1905. No. 31).—One of the strongholds of the theory that cancer cells are direct derivatives of normal epithelia, or that normal epithelia can be transformed into carcinomatous epithelia, has for a long time been the well-known condition, called Paget's disease. In this condition are found cells between the epithelial cells, distinctly different in character from the latter and assumed to be the initial stages leading to the final establishment of a carcinoma. They were considered as the primary changes of the normal cells. *Jacobaeus* (*Virch. Arch.* 178), however, first recognized the incorrectness of this view and found that they were secondary to the growth of a carcinoma under the skin. Ribbert, in three very instructive and typical cases of the disease has conclusively shown that this conception is true; he has followed the growth of a columnar celled carcinoma toward the epidermis, has demonstrated the migration of its cells between the cells of the latter, thus giving the picture formerly described as their transformation. Ribbert's work is the more demonstrative, as two of his carcinomata had columnar cells, that alone exclude an origin from the squamous epithelium of the epidermis. Paget's disease, therefore, is not a peculiar chronic carcinomatous change of the surface epithelium, but a slow destruction and elimination of this epithelium by tumors that lie below it and grow towards it.

On the Presence of Certain bodies in the Skin and Blister Fluid from Scarlet Fever and Measles.—CYRUS W. FIELD.—(*The Jour. of Experim. Med.* Vol. vii., No. 4).—Field's careful observations have shown him that the bodies found in skin sections from cases of measles and scarlatina are part of the protoplasm of the epithelial cells; the small round extracellular bodies may arise in the same way. If these bodies of *Mallory* were protozoa, they would have been found in the sections both from the living and the dead skin, as they were present in blister-fluid, as Duval first has shown. Their absence in the living skin is suggestive more of a degeneration than of a protozoon. They were not found immediately after death in one case, while they were found in skin removed from the same case twenty-four hours later. It seems likewise probable that the bodies found in the blister-fluid are products of degeneration also, as they are found in antitoxin rashes as well as in measles and scarlatina. It can certainly not be stated that none of these bodies is a protozoon, but it can be positively stated that a great majority of them arise from degenerating cells. It is not possible in many cases to differentiate, by staining, a degenerative product from a protozoon.

About the Pathogenesis of Pulmonary Tuberculosis.—F. WELEMINSKY.—(*Berl. Klin. Woch.*, 1905, No. 24, 31, 32).—Weleminsky opposes in

this work conceptions about the progress of a tuberculous process, that for a long time have been considered as proved by innumerable clinical and pathological observations. It is impossible here to enter into the details of his researches; they certainly call for control researches, in order to demonstrate whether the older ideas have to be abandoned. Welemisky's conclusions may be shortly quoted.

Tuberculous tissues do not infect their regional lymphatic glands. Wherever tuberculous lymph glands are found, we have to deal with a primary infection of the lymphatic system. In almost every human and bovine tuberculosis lymph glands are affected. Therefore, it is to be concluded that almost every spontaneous tuberculosis in man and animal is primarily a disease of the lymphatic system, that advances only secondarily to other tissues. At a certain stage of the disease a distuning (*unstimmung*) of the organism takes place, in the guinea pig after subcutaneous inoculation in four to six weeks, in the rabbit intravenously injected, much earlier; the process advances by continuity or by blood dissemination (chronic miliary tuberculosis); a genuine immunity is not established. But the lymphatic system at the time cannot be infected any more, even if involved directly. At what time this stage is reached in man and how long it persists, if recovery is achieved, cannot be said with certainty. That it makes its appearance is, for instance, shown in the tuberculosis of the ureteral and vesical mucosa, where no simultaneous glandular involvement is found. Since the spontaneous infection in man is almost always lymphogenous, it must be concluded that a human individual can be infected with tuberculosis (just like in the case of syphilis) only once in his lifetime, certainly a reinfection can only occur after an interval lasting a long time.

The experiments on which Welemisky bases his conclusions are very numerous; whether their interpretation in every case will be accepted is questionable. The work, however, will give a strong impetus to further study; the final results will have a weighty bearing on the decision to be reached on many discussed points brought forward by Behring's publications.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

Operative Treatment of Puerperal Pyemia.—BUMM (*Berlin. klin. Wochens.*, No. 27, 1905. Dedicated to Professor Olshausen at the occasion of his seventieth anniversary).—In cases of acute and chronic puerperal pyemia the bacteria travel from the endometrium through the uterine wall into the surrounding venous plexus. This pathologic-anatomic observation prompted Bumm to try to intercept the infection on its way into the vena cava. His operation consists in a laparotomy, at which the diseased veins are ligated and extirpated. The operation has been performed by the writer in five very serious cases, with high tempera-

ture and severe chills, three of the patients recovered. The author describes in detail the symptoms and diagnosis of those cases which seem most suitable for this operation, that is destined to take the place of the more radical and dangerous extirpation of the septic uterus.

Uterine Rupture in the Old Scar of a Cæsarian Section.—WERTH (*Ibidem*).—Reports of such ruptures appear with increasing frequency in modern literature. The author adds one more case to the eleven which so far have been recorded. He describes the mechanism, symptomatology and therapy of this unfortunate complication and makes in his conclusions the discouraging statement that the strength of the uterine scar after a Cæsarian section does not seem to be dependent upon the suture material, upon the method of closure or the location of the incision.

Myoma and Menopause.—WINTER (*Ibidem*).—In patients suffering from myomata of the uterus the menopause, as is well known, is delayed. It seems unjustifiable to advocate conservatism, relying upon the possible beneficial influence of the menopause, if the patient is not older than fifty years, because according to recent statistics only in a patient of fifty-five years cessation of menstruation can be expected within a reasonably short time. In the experience of the writer in about 17 per cent. of all cases serious symptoms, which necessitate operation, make their appearance after the period of life which in healthy women marks the beginning of the climacterium. It is, however, true that in the majority of cases the myomata participate in the general senile involution of the uterus.

Albuminuria and Artificial Interruption of Pregnancy.—VEIT (*Ibidem*).—This is a most interesting and valuable paper. The writer endeavors to outline the essential points of difference between the so-called "kidney of pregnancy" and true nephritis, a matter of great importance from the standpoint of therapy and prognosis. Unfortunately the symptoms do not always permit a positive differentiation. Albuminuria alone never forms a justifiable cause for artificial termination of pregnancy. Artificial abortion is indicated only if in the course of an albuminuria the symptoms of a true nephritis appear, such as ascites, general hydrops, hypertrophy of the left ventricle, especially symptoms of a retinitis. In patients who have a nephritis at the time of impregnation the writer interrupts pregnancy, if the general condition of the patient becomes gradually worse, if dyspnoea or irregularities of the pulse become manifest.

Menstrual Fever of Tuberculous Patients.—SABOURIN (*Revue de Médecine*, Mars., 1905; rev. *Muenchn. Med. Woch.*, No. 29, 1905).—The writer records an observation which is not only of considerable scientific interest, but may prove of great practical value. In his opinion tubercular women almost without exception show a rise of temperature at the time of menstruation. The physician should never forget this fact if he wishes to protect himself against undesirable errors. The author be-

lieves that a careful observation of the temperature in connection with menstruation may in doubtful cases help to establish the diagnosis. This menstrual fever is of a benign nature, and as a rule does not markedly influence either the general condition of the patient or the progress of the tubercular disease. Those patients who have had attacks of hemoptoe during menstruation should during this time be kept in bed. Usually, however, the hemoptoe precedes menstruation and stops with the appearance of the flow.

The Fate of Emboli Formed by Placental Tissue.—SCHMORL (*Verhandl. d. Deutsch. Path. Ges.*; rev. *Zentralbl. f. Gyn.*, No. 24, 1905).—In examining the lungs of 158 patients who died during labor or the puerperium, the writer found only twice extensive embolisms of pulmonary tissue produced by deported Langhans' cells and syncytial masses with distinct signs of proliferation. The foreign tissue was found lying close to the wall of the vessel, the intima had disappeared and often the muscular coat contained some of the placental tissue. The microscopic appearance of these emboli closely resembles the early stages of a metastasis of a typical malignant chorio-epithelioma. In both of these cases abortion had occurred very early in pregnancy, in one at the end of the first, in the other at the beginning of the second month of gestation. Since the writer has seen such an extensive deportation of cells of the chorion only in four cases of hydatiform mole, three of which had resulted in abortion within the first month of pregnancy, he feels justified in assuming that possibly also in these two cases the chorionic villi may have been degenerated. He, therefore, concludes from his studies that only emboli originating from the chorionic villi of a hydatide mole have the faculty of a progressive development.

The writer in this paper contradicts the views of Veit, and claims that the deportation of complete villi into distant organs, or even the simple detachment of chorionic villi as described by Poten, is not a physiological but a distinctly pathological process, occurring only in cases in which the placenta is damaged by mechanical causes, such as manual removal of the placenta, placenta previa or uterine rupture.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

Etiology and Classification of the Summer Diarrheas in Infancy.—DUNN (*Arch. of Ped.*, June, 1905), reviews the literature and summarizes the results of his study of 620 cases as follows:

The diarrheal diseases of infancy, occurring in the summer months differ in no way, clinically or anatomically, from the diarrheal diseases occurring in the cooler months, except in their much greater frequency.

Classification on an anatomical basis is not convenient owing to the variety of lesions found in cases of similar etiology and clinical course,

and the lack of correspondence between the anatomical and clinical picture.

The following clinical classification is suggested:

(a) Acute nervous diarrhea, characterized by loose stools of normal color and odor without abnormal constituents.

(b) Irritative diarrhea, acute intestinal indigestion of the irritative type, characterized by the absence of persistent fever, and by the presence of curds and undigested masses in the discharges.

(c) Fermental diarrhea, acute intestinal indigestion of the fermental type, characterized by the absence of fever, and by green stools of a foul or sour odor.

(d) Infectious diarrhea, characterized by the existence and persistence of fever, and by the tendency toward early signs of ileo-colitis, as shown by the presence of blood and excess of mucus in the discharges. When a specific organism, the bacillus dysenteriae, is proved to be the cause, the cases may be termed infantile dysentery.

(e) Rare cases occur, corresponding to the known description of heat exhaustion and cholera infantum.

Of the above differentiated types, the indigestion forms, including the irritative and fermental cases, are by far the most common.

The chief cause of all the above types is the increased heat of the summer months, producing functional disturbance either of the nervous system or of digestion in the non-infectious cases, and producing conditions more favorable to infection in the infectious cases.

Bacteria are the secondary cause of a number of cases, largely if not wholly belonging to the type classified, clinically, as infectious. Infection occurs by the introduction of bacteria from without, or by auto-infection with bacteria already in the intestine. The latter is probably the usual method.

The bacillus dysenteriae is a cause of most of the infectious cases; whether it is the sole cause remains to be determined. This bacillus can often be found in the intestine in cases where it probably has no causal relation with the pathologic process. Such cases are usually, clinically of the non-infectious type. Other organisms are probably a cause of some of the infectious cases.

The anatomical changes of various kinds included under the term ileo-colitis, may occur in any of the above clinical types, except the acute nervous.

Anatomical changes of some kind probably occur in all infectious cases.

Digestive Auto-Intoxication.—THOMAS (*Rev. Mens. de Mal. de l'Ent.*, July, 1905), devotes the first paper on this subject of great interest, to a discussion of its etiology and pathogenesis.

From his studies of the subject and from a review of the literature, he concludes that at the present time it is not possible to define, precisely, the characteristic symptoms of this condition. The different systems of the body may be of etiologic importance, either singly or in combination. Thus an auto-intoxication may be produced in the course of functional or organic disturbances of the gastro-intestinal tract, in certain disturbances of the general nutrition, or in diseased conditions of the nervous system. The relative importance of these causative factors

varies, but it appears settled that in a great number of these cases, the most important cause is some alteration in the functions of the nervous system. Unquestionably, modifications of the digestive ferments, and the consequences thereby ensuing, play an important role in the pathogenesis of the condition.

The chemical substances, ptomaines or others, produced in the course of intestinal auto-intoxication, are as yet imperfectly known. However, the importance of this factor doubtless stands in direct relation to the amount and degree of absorption taking place. And again, this varies greatly in different cases and individuals.

The presence in the urine of certain aromatic bodies (ethereal sulphates) in increased quantity, cannot be considered an absolutely pathognomonic sign of the existence of an auto-intoxication. Nevertheless, their presence in the urine may be taken as an important confirmatory diagnostic sign.

Intestinal auto-intoxication thus represents a complex syndrome of various phenomena, developing from a variety of causes. It is certain that in the pathogenesis we must consider the state of all of the organs of the digestive tract, not limiting ourselves to the condition of the intestines. It is not probable that the stomach *per se* is an important factor, though it is true that insufficient elaboration of the food stuffs in this viscus would have an affect upon the rest of the digestive apparatus.

The liver is, however, a factor of the greatest importance. Insufficiency of the hepatic function, either congenital or acquired, will be found to exist in the majority of these cases.

When the multiplicity and complexity of this function are considered, this is easily understood.

The small intestine also plays a role of importance. The study of the intestinal ferments is just beginning, and their importance to the body economy is being more and more clearly recognized. Particular weight is to be attached to the persistence of the normal integrity of the intestinal mucosa. If this be broken from any cause, the intestinal secretions are apt to be abnormal, both quantitatively and qualitatively. As a consequence, the modification which the food stuffs should undergo in the intestine will be incomplete, and, in turn, the noxious action of the bacterial content of the large bowel will be greatly enhanced.

Therefore it is that Senator could say: "Intoxication cannot take place unless the toxic products exist in very large quantity, or the mucosa is abnormal, or the other organs of defense are below par."

It would, therefore, appear that the role of the large intestine in the production of this condition had been somewhat exaggerated. In the colon, resorption is the principal factor, and here again, the condition of the mucosa is all important. Leaving out of consideration the cases where there is a gross pathological lesion, and where intoxication is, therefore, purely secondary, we find that in cases of primary intoxication it is the nervous system, which, by controlling the condition of the mucosa, actually determines the possibility of attack in cases where the necessary antecedent conditions, as outlined above, are found.

Considerations of therapy are reserved for future communication.

White Stools of Nurslings.—JUILLET (*These de Paris*, 1905, *Rev. Mens. de Mal. de l'Enf*) says that in the course of chronic gastro-enteritis in

nurslings, it often happens that the stools are white, pasty, sticky and horribly fetid. Their reaction is usually acid. Bacteriological examination has not thrown any light on the subject. On chemical analysis, two principal characteristics are noted: (1) Complete acholia. (2) The presence of a very considerable quantity of fats, running as high as 76 per cent. of the solid matter, and speaking for a functional disturbance of the liver. With reference to etiology, various factors are noted: Premature infants, syphilis and tuberculosis. But the most important causal factor, according to the author, is always *superalimentation*. These white stools are, as a rule, not found in the early stages of a gastro-enteritis; it requires a prolonged intoxication to produce them.

The prognosis is grave, because the organism of the infant cannot stand the loss in calories ensuing from the non-assimilation of the fats. In addition, the functional disturbance of the liver always carries with it a lessened resistance to infection.

Treatment should be prophylactic rather than curative and consists, principally, in the selection of an appropriate diet for the child. With the condition existent, however, it would appear rational to avoid giving fat foods, which cannot be assimilated, and to run up the quantity of carbohydrates, which, while affording nourishment to the organism, do not throw any strain on the liver.

ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

Transitory Paralytic Club-Foot.—ALFRED SAXL (*Zeit. f. Orth. Chir.* Band XIV, Heft 1). Club-foot due to flexor paralysis falls under one of two heads. Under the first head those in which the shape of the foot in all positions, either with or without weight bearing, is maintained. Under the second head are included the cases in which the foot is pulled into a typical club-foot shape only when weight is borne, losing its varus position when not supporting the body weight. The author speaks of these cases as transitory club-feet. The tibialis anticus is paralyzed more or less, while the extensor communis and extensor hallucis are usually parietic. The gastrocnemius and peroneal muscles are usually good. Thus, when no weight is borne the foot may be in the position of equinus with the arch increased. The reason that the club-foot attitude disappears when weight is borne is, that in sitting the foot comes into plantar flexion on account of short tendo achilles, permitting the peroneal muscles to act as pronators. When, however, the foot is placed upon the floor the tendo achilles is fully stretched and the foot is supinated. In the beginning these cases should be treated so as to prevent club-foot. Where club-foot already exists the author uses the modelling redressment of Lorenz.

A Case of Traumatic Coxavara Treated by Cervical Osteotomy.—GAUDIER, LILLE (*Revue d'Orthopédie*, March, 1905).—The operation of osteotomy performed on the neck of the femur is difficult. It is, however, not so difficult as resection of the femoral head. It may be performed either with the chisel and mallet or with the Gigli saw. Combined extension and inward rotation together with wiring of bones will give excellent results. The treatment, however, is similar to that which is suitable for ordinary cases of fracture of the neck. Where the deformity is slight, sub-trochanteric osteotomy will give good results.

Tuberculous Tarsalgia of Adults.—LEON THEVENOT (*Revue d'Orth.*, March, 1905). Tarsalgia may be the first symptom of tuberculosis of the ankle. Clinical observations and pathological anatomy show that a valgus ankle with flat foot may present symptoms which are not dependent on the mechanical condition of the foot but may be due to infectious arthritis, or may be due to tuberculosis. The author suggests that one should investigate with care the previous history and the family history in these cases, as well as to bear the above mentioned facts in mind when making a diagnosis of valgus.

The Treatment of Congenital and Acquired Luxation of the Shoulder in Childhood.—ROYAL WHITMAN, M. D., New York (*Annals of Surgery*, July, 1905).—These cases may be divided into three classes, (1) true congenital misplacement of the humerus, (2) dislocation caused directly by violence at birth, (3) acquired sub-luxation, due to injury of the brachial plexus. Cases of the first class are very uncommon and are therefore of little importance, cases of the second class are uncommon also. The dislocation in these cases is apparently caused by traction on the arm at delivery or by swinging the child by the arms in attempts at resuscitation. In the third there is no primary displacement, the luxation can be classed as congenital only in the sense that it is induced by an injury at birth, *i. e.*, the brachial plexus is injured by traction at the time of delivery. The characteristic obstetric paralysis follows, involving the biceps, the deltoid and the supinator to the forearm, the arm hanging by the side in an attitude of inward rotation and pronation. There is a very general impression that spontaneous recovery is the rule after obstetric paralysis, consequently systematic treatment for the improvement of the deformity is not usually employed: and, although the original helplessness gradually lessens, the comparative disability may become more marked with development. It was at one time generally believed that the larger portion of these cases were truly congenital, and that there were accompanying developmental defects that would prevent reposition. Phelps, therefore, advised the operation of opening the joint and cutting away sufficient of the head of the humerus to accommodate it to the contracted capsule. The author is of the opinion, however, that it is more rational to increase the capacity of the joint rather than to further diminish the size of the already atrophied head of the humerus. In other words, the treatment should be similar to that of bloodless reduction of the hip joint. When the head of the bone has been replaced, there is a distinct depression behind and the head of the humerus projects in front. It will often be noticed that

tension on the anterior tissues causes flexion of the forearm. This must be overcome by stretching. The extremity is then fixed in over-corrected attitude by means of a plaster bandage which includes the thorax. In the more extreme cases it is impracticable to complete the operation at one sitting. The essentials of successful treatment of this difficult class of cases are complete overcorrection at the time of operation; fixation for a sufficient time to assure the stability of the new articulation by accommodative changes within and without the joint, and persistent after treatment.

Operative Treatment of Bone Tuberculosis.—(CHARLES F. PAINTER, M. D., Boston (*American J'l of Orthopedic Surgery*, July, 1905).—There is great need of the careful consideration of the indications for operative treatment in bone tuberculosis. There are a great many cases reported in literature, but, as a rule, they refer to interesting instance occurring in the practice of others which have served to illustrate some particular point that the writer wished to bring out. There are very few discussions of the indications for treatment based upon a combination of considerable clinical experience with the fundamental pathology of tuberculosis of the bones and joints. In children tuberculosis of the bones and joints is regarded in the same light by practically all rational surgeons, certainly as far as the operative management of the disease is concerned. The consensus of opinion seems to be that the less interference there can be the better. We have occasionally become temporarily enthusiastic, however, over attempts to extirpate tuberculous foci in childhood. As to the treatment of tuberculous abscesses, some have advocated radical treatment and others have advocated letting them alone and letting them break of themselves. Aspiration is attended with difficulties in children and is in consequence, a method relegated to adults. The author is of the belief that aspiration should be followed in many more instances in childhood, as it is certainly attended with infinitely less danger of contamination, and that it is contamination alone that renders a tuberculous abscess a menace to the individual possessing it. He is of the belief, also, that there is a very definite field for radical surgery in tuberculous disease; that this field can be exactly outlined by certain specific rules which it is not often possible to make exception to; that there would be a great deal less need of operative surgery than there now is if our cases were properly managed in the earlier stages of the disease; that tuberculosis of the bones and joints is tuberculosis and not simply joint disease; that the principles which underly the successful treatment of all tuberculosis, pulmonary or otherwise, as certainly underly the treatment of this disease of the bones and joints as they do anywhere else, and that one who attempts this kind of surgery without being in a position to follow out the treatment other than operative, had much better forego the operative measures in the majority of instances and give his patients the benefit of Nature's restorative measures.

The X-Ray as an Auxiliary Treatment in Bone Tuberculosis.—(F. E. PECKHAM, M. D., Providence (*Am. J'l Orthopedic Surgery*, July, 1905).—Tuberculosis in its many forms and many different locations often presents difficulties in the way of treatment that are well nigh insurmount-

able. Surgery plays an important part in these troublesome cases, but the general nutrition and fresh air and sunshine are as necessary as in pulmonary tuberculosis. The author presents five cases of bone tuberculosis that he has treated by exposure to the x-ray. They were all suppurative and might rightly be considered desperate. One was a failure, although even here there was slight temporary improvement. Two of the others were very markedly improved, while two desperate cases were practically saved from amputation—one being a knee, the other an elbow. He is of the opinion that the x-ray may be of the very greatest assistance many times even when the tuberculous proves extremely resistant to all methods.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

Return of the Knee Reflex in Tabes Dorsalis Without the Appearance of Hemiplegia.—DONATH (*Neurologisches Centralblatt*, 12, 1905).—It is a commonly accepted fact in neurology that a knee jerk in tabes appears again only under one condition, and that is, if there develops a hemiplegia of central origin. In that case the knee jerk may not only return, but be increased. The explanation of this lies in the fact that the knee jerk in tabes disappears, not alone from the degeneration of the fibers, in a part of the reflex arc, but also because the reflex function needs a greater amount of stimulation to arouse its activity. A further explanation of the return of the reflex lies in the assumption that the fibers themselves forming the reflex arc are capable of regeneration. The case here described is one in which the author assumes that the lesion of the reflex center was capable of regeneration, which took place coincident with the general improvement of the patient.

Varieties of Multiple Sclerosis Differing in their Development from Well-Known Types.—MULLER (*Neurologisches Centralblatt*, 13, 1905).—This is a timely paper on a subject that is at present of great neurological interest. There is a growing opinion that one of the most common of organic nervous diseases is multiple sclerosis. Muller himself believes that in the country this disease is the most frequent of the gross organic lesions of the nervous system, and that in the cities it comes next in frequency to the syphilitic and metastatic syphilitic diseases. It has further been found that the atypical and the elementary forms of this disease largely outnumber the classical varieties. In fact, it is believed that multiple sclerosis, with the typical text-book group of symptoms, is a very rare condition. The author holds that the peculiar optic appearance is the most certain and the most important diagnostic sign of this disease. That is, the atrophic discoloration of the papilla, especially the temporal pallor. In the doubtful cases the determining diagnostic features are temporal pallor of the papilla (especially in re-

lation to the characteristic features of the acuity of vision and the field of vision), the absence of the abdominal reflex, the Babinski phenomenon and a slight degree of tremor of the arm in finely intended movements.

The Differential Diagnosis Between Cerebellar Tumors and Chronic Hydrocephalus.—FINKEINBERG (*Deut. Zeit. f. Nervenheilkunde*, Vol. 29, 1, 2, 1905).—Three cases form the material of this paper. The importance of this aspect of the subject will be found largely in the question of operation. Of course, the fact that the two conditions are often found together adds to the difficulty of the problem. The author forms the following conclusions:

1. Cerebellar gait can occur in chronic hydrocephalus and in tumors of the central ganglion as an early symptom.

2. A normal condition of the tendon reflexes, and even a weakening of them, does not speak against chronic hydrocephalus.

3. The group of symptoms known as Schmidt's symptom, consisting of vomiting, dizziness, etc., in cases of cerebellar tumor in certain lateral positions assumed by the patient, as opposed to the absence of them in hydrocephalus, is of no value, as they occur likewise in cerebral tumors.

4. Circumscribed pressure and tenderness to percussion are found in hydrocephalus as well as in tumor.

5. More pronounced development of the choked disc on one side than the other does not point to the localization on that side.

Paralysis of the Abdominal Muscles in Anterior Acute Poliomyelitis in Children.—IBRAHIM HERMANN (*Deut. Zeit. f. Nervenheilkunde*, Vol. 29, No. 1, 2).—Although the text-books speak of the possibility of the abdominal muscles being paralyzed in the acute anterior poliomyelitis of children, very little additional evidence is found in the literature that this fact has received the attention that it deserves. The author describes four cases in which the abdominal muscles are more or less involved. In two cases the muscles on both sides were paralyzed. The reports of similar cases found in the literature are discussed and compared with ones reported here. There has as yet been no autopsy record of a case studied histologically. From the meagre material collected, including the reported cases in this article, favorable prognosis is regarded as warranted. They seem to show a well-marked tendency to improvement.

Note on a Case of Advanced Carcinoma Uteri with Some Symptoms of Bulbar Palsy and Almost Negative Microscopical Findings.—WARRINGTON (*Rev. Neurol. Psych.*, No. 8, 1905).—A brief report of a case in which the symptom complex of myasthenia developed. The autopsy findings were so slight that the symptoms were not explained by them. The explanation of the occurrence of this group of symptoms and the apparent negative post-mortem findings must, for the present, at least, depend upon the theory that there can be alteration of the nerve cells severe enough to produce functional anomalies, without the presence of anatomical changes definite enough to be shown by the ordinary methods in use at the present time.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

Prostatic Hypertrophy; Its Surgical Treatment; Conclusions Drawn from Twenty-five Cases Operated on by the Writer.—FOLLEN CABOT (*Amer. Jour. Urol.*, June, 1905).—An operation for hypertrophy of the prostate should be undertaken on the earliest evidence of urinary obstruction. The habitual use of the catheter by prostatitis should be relegated to the rear. Long before such a practice has become necessary, the prostate should be enucleated. We would thus operate on patients in fairly sound condition instead of those with most of their vital organs damaged.

For those cases in too bad a condition to stand an immediate prostatectomy the bladder should be opened supra-pubically or by the perineal route for drainage, vesical lavage and general treatment. If this slight operation has not proven too much for him, a complete operation can be performed later on. If he does not survive the simple drainage, he certainly would not recover from a prostatectomy. Sounds for dilatation of the prostatic urethra do more harm than good.

A cystoscopic examination of the bladder at the time of or just before the operation, is of decided advantage, if easily executed. Some patients cannot be cystoscoped, and so no prolonged effort should be made to do so.

Where other conditions are favorable, the perineal prostatectomy is the operation of choice. Fifteen cases without a death are reported. It is noteworthy that the author does not use any kind of packing for the wound, employing only a large rubber tube, of forty or more French, placed in the bladder through the perineal wound. The author reports ten supra-pubic prostatectomies, with four deaths.

An Attempt to Adapt for Clinical Purposes, the Tests for Electric Conductivity of Urine.—(KOLISCHER and SCHMIDT, *Med. News*, August 5, 1905).—For determining the functional capacity of the separate kidneys, the various methods that have heretofore been proposed have been found wanting. Cryoscopy was received with the greatest enthusiasm as the method that should give infallible results in this direction, but controlling experiments soon proved that the reliability of this method was overrated, then this method was more elaborated by comparing the cryoscopy of urine with the cryoscopic results in blood examination. But it was shown that cryoscopic results are not only influenced by the mistakes of art that are very likely to occur; but also by conditions under which the patient lived previous to the examination, as exercise, nourishment, etc. It furthermore was shown that a healthy kidney temporarily may be disabled to a certain extent on account of toxin brought into circulation by its diseased mate. In this way a cryoscopical examination carried out in this particular period will lead to misjudging a practically normal kidney. The estimation of the elimination of urea and certain staining fluids has given unsatisfactory results.

Finally the test of the electric conductivity of the urine was introduced in order to determine the functional capacity of the kidneys. This latter method is based on the experience that a normally functioning kidney will furnish a urine of higher electric resistance than would a kidney that is diseased. This method is not reliable.

None of these methods furnish a possibility of discriminating between a permanently diseased and disabled kidney and a healthy kidney that only temporarily is impaired in its function by the influence of its diseased mate. The authors endeavor to find out whether running a stain through the kidney might not influence the functional capacity of a normal and an abnormal kidney in a different way. As a stain they selected indigo-carmin, and as a method of testing they selected the test for electric conductivity on account of its extreme sensibility.

It seems that their results may lead us to expect something in this line.

A New Model of the Catheterizing Cystoscope.—AYRES (*Amer. Jour. Urol.*, June, 1905).

Cystoscope with Direct Vision.—LUYS (*Ann. des Mal. des Org.-Urin.*, July 15, 1905).—Ayres considers the direct view cystoscope much more useful for ureteral work than the indirect view instrument. He has constructed and illustrates an instrument which is based on the lens system that is capable of giving both a direct and an indirect view. The difficulty of leaving the ureteral catheters undisturbed upon withdrawing the cystoscope is overcome in his instrument.

Lays also mentions the advantages of the direct view cystoscope and describes his instrument, which is essentially a straight tube without a lens system. As the inconvenience of an instrument of this design is that, as the urine comes down from the ureters it gets into the tube and obstructs the view, he has placed a tube at the lower part of the cystoscope, which, through suction, constantly keeps the bladder dry. The light is placed in the upper portion of the cystoscope to better illuminate the field. With this instrument the true aspect of the vesical mucosa and the ureteral openings may be ascertained.

Clinical and Experimental Studies Concerning the Pathogenesis Epididymitis Gonorrhœica.—OPPENHEIM and LOEW (*Amer. Jour. Urol.*, July, 1905).—Their investigations lead the authors to conclude that *retroperistaltic movement of the vas deferens* is the determining factor in the causation of epididymitis. Irritations and injuries of the posterior urethra set up a retroperistaltic movement of the vas deferens, and thus infection is rapidly transmitted to the epididymis, causing inflammation of that part. Therefore, it is contraindicated to apply instruments of any kind in acute posterior urethritis. Every necessary exploration of the prostate must be made with great precaution. The patient must refrain from sexual excitement, pollutions and violent muscular exertion. The more acute the posterior urethritis, the greater the danger; for the hyperemia furthers, in consequence of the higher irritability, the occurrence of the authors' reflex.

Finger's idea of suspending all local treatment of the posterior

urethra, if epididymitis exists on one side is correct, because there is danger of the other epididymis becoming affected.

In subacute and chronic posterior urethritis where gonococci are still present, one should avoid using irritating injections.

Punctured Wounds of the Bladder.—EVANS and FOWLER (*Ann. Surg.*, August, 1905).—Wounds of the urinary bladder are extremely uncommon, rarely being seen in private practice, and even in military practice are quite infrequent, as may be seen from the records of the Civil War. In its normal position the bladder is well protected from injury by sharp or blunt instruments, yet when rendered less resistant by inflammatory changes it may yield to the most trivial injuries, as a slight fall or blow. The presence of bloody urine, either escaping from the wound or drawn with the catheter, leaves no doubt that the bladder has been injured. Indeed, in suspected cases, the introduction of the catheter should not be neglected. Whether the peritoneum is also involved, in doubtful cases, may usually be determined only by exploratory laparotomy.

Free drainage is the key-note to extra-peritoneal wounds, while if the perineum is involved, immediate laparotomy must be done, the rent in the bladder sutured, and the peritoneum cleansed and drained.

The authors exhibit a list of published cases, and describe one of their own. In this case there was a double puncture of the bladder through the perineum, with laceration of the anterior wall of the rectum. Immediate laparotomy was performed, the bladder and peritoneal rent closed, and the abdominal cavity washed out and closed. A retention catheter for drainage was placed in the bladder through the large perineal wound. Fourteen days later the laceration of bladder, rectum and perineum was repaired, the patient making a complete recovery.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

Conchotomie.—RINDELEISCH (*Monatsschrift fuer Ohrenheilkunde. Nasenkrankheiten, etc.*, April, 1905), calls attention in the above referred to article, to some conclusions arrived at by himself and Dreser, whom he quotes, as to the advantages of prescribing aspirin immediately before operation for hypertrophy of the turbinated bones. He declares, quoting Dreser, that the danger of profuse hemorrhage, so liable in patients who commonly suffer from cold hands and feet, is much lessened by a dose of aspirin given just before the operation, and that in cases where chloroform narcosis is indicated, the use of aspirin is also advantageous, as in his experience the tendency to nausea and vomiting is much lessened, and the heart's power of work is increased. He explains the lessened tendency to hemorrhage, by the fact that the circulation in the skin is benefitted by aspirin, as evidenced by the warming up of the pre-

viously cold extremities, and that thereby a collateral anemia of the mucous membranes generally, including that of the nose, is produced. He claims that aspirin, in contradistinction to salicylate of soda, does not depress but rather strengthens the heart, as above mentioned.

Radical Treatment of Acute Otitis Media.—DUBAR (*Le Progres Medical*, June, 1905).—The author gives in the above article an interesting synopsis of the treatment, both remedial and prophylactic, in otitis media. He divides his subject into otitis media in the new born, in children, and in adults. First, he calls attention to the frequent difficulty in diagnosing the trouble in very young children, who often in the course of some acute affection, or during convalescence from it, are seized with a crying fit lasting sometimes many hours, the cause of which is not discovered until a drop of pus is observed in the ear. In such cases the tympanum has burst to let out the pus, but where it does not burst, as is well known, the pus invades surrounding cavities setting up mastoiditis and meningitis. The author states that hundreds of children die every year in Paris from this form of meningitis alone. The infection comes through the Eustachian tube, the naso-pharyngeal opening of which is peculiarly wide open in the new born and filled with mucus, and suppuration occurs if a lowered vitality "state of least resistance" takes place. He advises the antiseptic cleansing of the mouth and naso-pharynx at the first signs of sickness by syringing, morning and evening, a few drops of the following mixture into each nostril: Sterilized olive oil, 60 grammes; resorcin, 2 grammes. The child should be laid flat on a table and its head held by an assistant. He advises also placing in each ear, morning and evening, a pledget of absorbent cotton soaked in the following mixture, previously warmed: Glycerine, 40 grammes; resorcin, 1 gramme; acide phenique, 0.25 centigrammes.

This practice is without danger or inconvenience and should be persisted in during the entire course of the acute stage of the disease. Second. In the case of children he advises the same technique and principles, varying the proportion of the antiseptics to suit the age of the child and the cause of the otitis. He especially warns against the use of menthol, which, according to his experience is often caustic in its effects, and many children are peculiarly sensitive to it. He replaces menthol by "essence of thyme" in the proportion of 1 to 100. Third. In the case of adults, he introduces in each nostril, morning and evening, a piece as large as a pea, of the following pomade: Vaseline, 20; lanoline, 10; anitol, 1; menthol, 0.30; stovaine, 0.20, and the patient is told to blow his nose lightly and one nostril at a time. Gargling and washing out the mouth with mild antiseptics is to be done often each day.

The following mixture, luke warm, is recommended in 5 to 10-drop doses, to be put in the affected ear: Glycerine, 40 gr.; resorcin, acide phenique, aa gr. i, especially in the cases arising from grippe, but also in any case whether it is an otitis media or an otitis externa, or a furuncle of the external canal. The author, of course, recommends a direct examination to ascertain the condition before using the above mixture, but, he says, in cases where an examination is impossible, at least a satisfactory one, the above prescription can be used anyhow with advantage and without danger. Whether paracentesis should be per-

formed or not, he says can only be decided by the indications in each case and is often an exceedingly difficult question to answer. Cold, he regards as prejudicial, and the tympanum must be kept from contact with the air by a cotton tampon, or, better, by a large square of cotton applied over the whole ear. If the pain becomes diffuse, and extends to the mastoid cells, heated pieces of flannel applied over the painful area are more grateful and beneficial than ice. He advises against leeches, as although grateful, they produce such a change in the skin that further external examinations are rendered difficult. Antipyrin or chloral may afford some relief, as well as hot mustard foot baths, yeast or purgation. The indications for paracentesis, outside of the condition of the tympanum, he states as follows: continuous and increasing pain, deafness, recent and much complained of, fever, if due to the otitis and not to a concomitant grippe, broncho pneumonia or tonsillitis, evidences of brain involvement, and a bad general condition.

As to the subsequent treatment, he strongly favors the school which manages the case on the general surgical principles of drainage and asepsis. The dressing should be done once a day by the doctor, who uses a wisp of sterile gauze, introduced into the external auditory canal, having sterilized his hands and instruments. The ear is afterwards covered with a lister dressing.

There should be no irrigations and no applications of antiseptics and very little bathing. "Less frequent dressings are preferable to dirty dressings, and the less one irritates wounds the more quickly they heal." He makes the above observation because of the frequent efforts of members of the family to remove the discharge from the ear. Often the physician cannot make the daily dressings because of the distance he would have to go, or especially because the relatives say they cannot afford the expense that seems to them connected with a condition that no longer gives trouble, and is healing rapidly. The answer to this should be that it is impossible to tell whether the case will be serious or not, so it is far better to treat each case with the same and the greatest care. The other school, with which he disagrees, employs lavage freely when the drainage is good; that is, "when the external canal is filled with pus." The lavage can be done once a day, *with gentleness*, with a solution of H_2O_2 (1 to 12), a tablespoonful to a litre of water. The external canal is dried with a cigarette of sterile absorbent cotton. Then 5 to 10 drops of the glycerine-phenique-resorcin mixture, 1 to 20, is poured in warm, and a wisp of sterile gauze introduced and left till it becomes impregnated. He warns against the use of balsam of Peru, oil of sweet almonds or laudanum, and if perforation has occurred, of caustics.

Regarding adenoids as the most frequent contributing cause of otitis media in children, he closes with an appeal for a careful search for them, and their early removal.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

MARTIN F. ENGMAN, M. D.

Condyloma Accuminates on the Frenula of the Tongue.—F. SPRECHER (*Progress Med.*, 1905, No. 4).—Man of twenty-seven years, has vegetation on the prepuce. On the frenula of the tongue are several little excrescences, 3 mm. to 4 mm. long, which are increasing in number and volume. On microscopic examination the lesion presented the typical appearance of condyloma accuminatum. Scholtz remarks that this case points to the contagiousness of these vegetations from the genital organs.

Trichorrhexis Nodosa.—M. L. HEIDINGSFELD (*J'l Cutaneous Diseases*, June, 1905).—In conclusion the author states that trichorrhexis nodosa is both a normal and a pathological process. It is universally present in long uncut hair as a normal condition and is probably nature's method of physiologically arresting and stunting an otherwise unlimited and eventually cumbersome overgrowth of hair. When present to excess in a predisposed individual, it becomes a pathological process and abnormally stunts the growth of hair; the nodes are more prominently wounded and are often multiple, separated from each other by uniform intervals of normal hair shaft. Its etiology has been variously attributed to trophic, parasitic and mechanical influences. A mechanical causation is improbable on purely clinical grounds, and is incapable of artificial demonstration. The condition in brushes can likewise not be attributed to purely mechanical causes. A parasitic causation is not commensurate with the evidence thus far adduced from clinical studies and bacteriological investigations. The most rational explanation of its etiology from physical, bacteriological and clinical investigation, and its analogy to kindred and associated changes in the hair rests in trophic influences, emanating from the metabolism at large, and permeating the hair to its ultimate extent.

A Case of Acanthosis Nigricans Following Cancer of the Breast.—MEN-AHEM HODARA (*Monatsheft. fuer Prakt. Derm.*, June, 1905).—This occurred in a young woman of thirty, following a breast cancer which was removed by operation the year before. The skin of the mouth and nose is very dark brown to black in color, is thickened and is bedecked by small crusts and wart-like excrescences. A short time afterward the patient noticed on the left breast a small black wart. After the operation in the following January, at which the whole breast was removed, the process in the skin extended. This case is interesting from the close coincidence of the two processes.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

A Convenient Instrument for Rapid Retinoscopy.—H. W. THOMSON (*Ophthalm. Review*, July, 1905).—An instrument, which has been found to be of considerable use in expediting hospital refraction work, consists of a light circular frame attached by its center to a long stem and having fitted into it twenty of the lenses most commonly used in retinoscopy. In use the instrument is chiefly supported by pressure of the right arm against the body. The left hand is only slightly thrust forward and is concerned with directing and rotating the stem rather than bearing any weight. The especial advantage which the instrument possesses is that no special adjustment or position of the patient is required. Nothing is required of him but to be still and to look in a certain direction. Thus a minimum of time is lost between examinations. The total weight is nine ounces.

The Accurate Determination of Errors of Refraction, without Cycloplegia, by Means of Astigmatic Charts.—C. N. SPRATT (*St. Paul Med. Journ.*, August, 1905).—The writer's conclusions are as follows:

1. With intelligent adults subjective methods of refracting are preferable to objective methods.

2. The comparison of two lines at right angles, these corresponding to the axis of maximum and minimum refraction of the dioptric system of the eye, is a more accurate method of determining errors of refraction than by the use of test letters.

3. Astigmatic charts, as devised by Verhoeff, are preferable to the single line charts, as the contrast produced by the cross lines enables one to estimate more accurately any difference in distinctiveness in the test lines corresponding to meridians of maximum and minimum refraction.

4. In practically all cases the astigmatism and myopia can be as accurately determined without as with cycloplegia.

5. A large proportion of cases of hypermetropia can be satisfactorily refracted without the use of cycloplegics.

Eyestrain, Its Importance and Its Limitations.—G. L. WALTON (a paper read before the Boston Society of Psychiatry and Neurology, May 18, 1905).—This paper is a praiseworthy endeavor on the part of an eminent neurologist to sift the grain from the chaff of the radical and diametrically opposed views of certain ophthalmologists and neurologists with reference to eyestrain and its effect on the nervous system. We believe Dr. Walton's sane and dispassionate attitude far more likely to result in the establishment of the truth with regard to this much mooted question than all the intemperate and verbose twaddle that has emanated from violent partisans in both the neurologic and ophthalmologic camps.

The paper should be read in its entirety, especially by those who hold extreme views *pro* or *con*.

The conclusions are as follows:

1. Among individuals totally blind since infancy, 66 per cent. were free from tendency to headache, as contrasted with 31 per cent. of those having sight, and 29 per cent. of those with partial or acquired blindness.

2. If these figures should prove constant, the inference would seem justifiable that half the headaches in health are due to eyestrain.

3. The headache, when present among those totally blind since infancy, partook sufficiently often of the migranoid character to preclude the supposition that all migraine is due to eyestrain.

4. The results of this study would indicate that while migraine and migranoid headaches have a constitutional basis, and while other factors than eyestrain may act as exciting causes, still eyestrain is one of the most, if not the most important, of these exciting causes, and steps for its relief are imperative.

5. In no case has correction of refraction been given a thorough trial until (a) the glasses are properly centered, (b) their continued readjustment is practiced, (c) the patient looks as much as possible through their centers instead of from side to side, (d) efforts are avoided at straining the eyes to see distant objects with the glasses (e) spectacles instead of eyeglasses are used, and (f) the use of spectacles is constant, not intermittent.

6. The constitutional headache of the deviate is probably allied to the headache of "brain fag," but is out of all proportion to the sources of the fag. Little can here be expected of spectacles.

7. In the proportion in which obsessive tendencies and other signs of constitutional peculiarity accompany errors of refraction, efforts at the correction of refraction will prove unavailing for the relief of nervous symptoms.

Method of Choice in Operating on Certain Types of Chalazia.—ANTONELLI (*La Clin. Ophthalm.*, July 10, 1905).—The method advocated by Antonelli was originally proposed by Agnew in 1888. It is applicable especially to chalazia situated near the free border of the upper lid and to all chalazia located in the lower lid, which, by reason of the narrowness of the tarsus, are always near the free border.

The lashes are grasped between the thumb and forefinger of the left hand and the lid drawn away from the globe and steadied. A double-edged knife is introduced just back of the ciliary margin and advanced between the cutaneous and tarsal planes until the cyst is reached. The knife is then made to execute a slight lateral movement, and is also turned slightly on its axis, in order to disintegrate the cyst contents. On withdrawal of the knife the contents may be expressed by pressure forward of the thumbs. If this maneuver is insufficient to evacuate completely the contents, the cyst wall may be curetted. The wound is usually found closed on removing the bandage the day after the operation.

BOOK REVIEWS.

HANDBOOK OF ANATOMY. By JAMES K. YOUNG, M. D. Second edition revised and enlarged. F. A. Davis Company, Philadelphia.

This edition is along the same lines as the previous edition by the same author. It furnishes a concise though complete synopsis of human anatomy for the use of students of medicine and others. It contains 171 illustrated plates, some in colors. The diagrams of the arterial system and of the nervous system are particularly handy for ready reference.

A PRACTICAL TREATISE ON FRACTURES AND DISLOCATIONS. By LEWIS A. STIMPSON, M. D., LL. D. Fourth edition revised and enlarged. Lea Brothers & Co., New York and Philadelphia.

Since the previous edition of this book appeared many interesting details, some of much practical importance, have been added to our knowledge of forms of fracture in or near joints, both by the x-ray and by greater frequency of resort to open operation. Also much new and valuable material has appeared concerning operative reduction of old dislocations. This fourth edition covers very well the improvements and new methods that have come into use since its predecessor appeared five years ago. The chapter on fractures and dislocations of the carpal bones is of particular interest. The skiagrams which illustrate the book are unusually good. The book contains 331 illustrations and 46 plates. All the operative procedures are well considered.

MANUAL AND ATLAS ON ORTHOPEDIC SURGERY, INCLUDING THE HISTORY, ETIOLOGY, PATHOLOGY, DIAGNOSIS, PROGNOSIS, PROPHYLAXIS AND TREATMENT OF DEFORMITIES. By JAMES K. YOUNG, M. D. P. Blakiston's Son & Co., Philadelphia.

The advance sheets of this work have appeared. It promises to be a valuable work on orthopedic surgery and is to contain many subjects not to be found in text-books, as historical illustrations, etc. The object of the work is to furnish in clear and concise terms a complete exposition of the subject of orthopedics. Particular attention has been paid to illustrations, many of which are from the author's original photographs. The aim of the work is to encourage not only the study of deformity, but to stimulate physicians to undertake the care of these cases, many of which have hitherto been regarded as incurable. The work is to be divided into two parts. The first part is to contain the etiology and pathology of deformities, together with details as to the manufacture of orthopedic appliances.

ATLAS AND TEXT-BOOK OF TOPOGRAPHICAL AND APPLIED ANATOMY. By OSKAR SCHULTZE, Wurtzburg. Edited with additions by GEORGE D. STEWART, M. D., New York. W. B. Saunders & Co., Philadelphia and London.

This book is supposed to be a topographic anatomy containing the essentials of regional anatomy and omitting the exceptional and unimportant details. These are presented in a graceful, forceful and brief manner, avoiding the tedium of those who attempt to include everything. The nomenclature has been changed to that which is in vogue in England and America. The book contains 25 colored illustrations and 89 text-cuts, 60 of which are in colors.

INTERSTATE MEDICAL JOURNAL.

VOL. XII.

OCTOBER, 1905.

No. 10.

ORIGINAL ARTICLES.

TREATMENT OF THE ACIDOSIC AND SUGAR STATES FROM TRAUMATISM.

BY GEORGE F. BUTLER, M. D., Chicago, Illinois.

It was very early recognized that traumatism produced profound metabolic changes, even when applied surgically. To one of the surgical consequences, Dupuytren applied sixty years ago the term *delirium traumaticum nervosum*.

Since the antiseptic era, especially, this condition has been noticed repeatedly after operations, when minute attention was paid to surgical detail, and particularly to nervous states, because of the fear of nervous effects of antiseptics.

The fact, however, that these nervous manifestations were due to the constitutional effects of operations, independently of their nature and seat, and independently of the effects of antiseptics and anesthetics, was pointed out by J. William White, of Philadelphia, who called attention to what he designated as the constitutional effect of the operation *per se*. This constitutional effect was of an alterative character, similar to that action which the older therapists ascribed to counterirritation. That this alterative effect had at times beneficial results was shown by the benefit occasionally received by the insane from traumatisms and from illogical surgical operations.

The *delirium traumaticum nervosum* of Dupuytren, in its clinical characteristics, was practically identical with the autotoxic and toxic psychoses. It had a confusional, hallucinatory phase, usually unattended with an emotional basis, but accompanied with aggressive tendencies. The relationship shown in the alternation of diabetes with the psychoses threw some light on the underlying element of this *delirium traumaticum nervosum*, as also did the relation of gout and rheumatism similarly with like nervous and psychic states.

The fact that in many instances diabetes and acid conditions alternated with psychic and nervous phenomena showed that disturbed metabolism underlay these.

During the past year numerous observations have shown that even the slightest traumatism, surgical or otherwise, may be accompanied with glycosuria and acidosis. Coriat has shown that all the depressed states are accompanied with acidotic conditions, which are the product of suboxidation that follows depression and continues it. The same factors following surgical operations have recently been observed by J. A. Kelly.

Urinalysis in surgical cases tends to indicate that the constitutional effect of operations is along the line of interference with oxidation, and that many of the cardiac strains are really due to increased arterial tension, arising from maloxidation. That traumatism arising from accidents may produce glycosuria and allied states has recently been legally decided in London. The question of diagnosis of these conditions is, therefore, of importance from the therapeutic aspects to which this paper is devoted.

The normal acidity of the urine is from thirty to forty-five degrees. If it fall below thirty, acid is very probably not being eliminated. If it rise above forty-five, acid has been formed in great quantities, and is being eliminated in such manner as to test renal sufficiency very severely. When the acidity rises above forty-five, evidences of renal strain appear—first, in cylindroid, and, second, in hyaline and granular casts. These conditions indicate a strain on the eliminatory powers of the kidney, which may end in permanent kidney lesion. Concomitant with these renal changes are hepatic strains and irregular intestinal fermentations, indicated by indicanuria.

The indication here is, first to increase oxidation by the use of respiratory stimulants, and, second, to decrease acidosis by the use of alkalis, **pre-eminent among which is sodium bicarbonate.**

Traumatisms are usually accompanied by constitutional changes, independent of pressure or of hemorrhage. The principal disturbances resulting from traumatisms are an irritable, suspicious state, which sometimes amounts to a complete change of character, and may be accompanied with secondary hallucinations and delusions, sometimes so systematized as to constitute paranoia. There are also recurrent and periodical conditions, some of which assume the ordinary simple psychic types of mania and melancholia alternation; then, again, assuming confusional mental recurrences, and sometimes type of aphasic recurrences as well as of epileptic types. That complex psychosis, parietic dementia, may, as Kiernan pointed out nearly twenty-five years ago, follow skull traumatism. There may likewise be attacks of a recurrent vertiginous type, accompanied with the usual phenomena of diabetic coma and the psychic nausea that so frequently occurs with that type of coma. All these conditions may follow skull and general traumatisms, and in all these there is evidence that metabolic alterations and instability have resulted. The recurrences may pass into the suspicious persecutory

states, with permanent alteration of character and resultant paranoia. In these recurrences there is an underlying factor of autointoxication, to which Kiernan has called attention in a paper read before the Evans-ton branch of the Chicago Medical Society. In these states, as in the condition of depression pointed out by Coriat, the products of suboxidation are usually acetone and diacetic acid, and more rarely B-oxybutyric acid. The presence of the last substance indicates that the tissues have been attacked, and that wasting and extreme poisoning are likely to result. In such cases there are usually excessive polyuric and watery intestinal evacuations. When these last occur, cardiac syncope is an imminent possibility. Despite the apparent contraindication, these conditions are most effectually met by large doses of a watery solution of sodium bicarbonate. In some instances the use of a gallon of a watery solution of sodium bicarbonate has cut down the polyuria from three gallons to one, and has checked the intense tissue changes.

The surface resemblance of some of these acid accumulations, precedent to the traumatic mental and nervous recurrence of the type just described, to ptomaine poisoning, is very striking, and the diagnosis is frequently made. Indeed, it is probable that some of the permanent aphasic states charged to ptomaine poisoning have been really due to traumatic acidotic conditions. The traumatism being the exciting rather than the predisposing factor, the question naturally arises: Can a therapeutic diagnosis be made with sufficient accuracy in these conditions to serve as a guide to prophylaxis? In all diagnoses there should be three factors—the etiologic diagnosis, the nosologic diagnosis and the therapeutic diagnosis.

In these traumatic conditions the etiologic diagnosis, so far as its primary or predisposing factor, is clear. The secondary or exciting factor requires more logical analysis. As already shown, traumatism produces metabolic instabilities along the line of suboxidation, finding expression in glycosuria and in the sugar acids: Acetone, diacetic and B-oxybutyric acids. To the extent of this acidotic state urinalysis furnishes a clue.

If the urinary degree of acidity be less than 30, the acids formed are not being excreted, and are tending to accumulate in the system. If the urine contains acetone, acid formation is proceeding at an intense rate, and this is still more the case if diacetic acid be present; while the presence of B-oxybutyric acid indicates deep-seated, intensely poisonous metabolic changes. A decrease in the acidity of urine in a traumatic indicates the imminent probability of some nervous explosion, which may vary from an intense neuralgia to coma, and to an agitated confusional insanity.

Here the therapeutic indication is to decrease the acidity in the system and to increase elimination. As the strain is chiefly on the kidneys, elimination should be diverted from these organs to the intestinal canal by the use of hydragogues, like chionanthus, apocynum, asclepias, ela-

terium, etc. In another paper recently published I have shown the action of these drugs, and suggested a formula, which in my hands has proved of marked benefit in these cases. After a few days' vigorous use of these hydragogues, I have substituted for them Abbott's saline laxative, and continued its use for some considerable time.

In the conditions above referred to there is invariably increased cardiac strain from the exaggerated arterial tension due to the acid states. This should be guarded against by the use of respiratory stimulants like strychnine and aspidospermine, since these drugs better than any others will give tone to the heart and increased oxidation, the diminution in which is one great factor in the acid conditions, whether resultant on traumatism, or on other causes.

The question of sleep, or, rather, of rest, will require attention. Were it not for their effect on the intestinal secretions, opium and its alkaloids would be ideally indicated, since they are good cardiac tonics as well as narcotics. The influence which opium and its alkaloids have on the secretions, however, contraindicates their use (with the exception of apocodeine muriate, which alone has a laxative action). Heroin has less inhibitory influence than morphine, but its exhibition hypodermically is apt to be attended by nausea.

Local hydrotherapy is indicated. Cold sponging down the spine and on the inner and outer aspects of the thighs is apt to be attended by a rapid tonic reaction, which increases the circulation from the interior to the exterior, thereby tending to increase oxidation.

A CLINICAL STUDY OF THE DIAGNOSIS OF URINARY CALCULUS.*

BY BRANSFORD LEWIS, M. D., St. Louis.

Diagnosis of Stone in the Bladder.—We are all familiar with the classical symptoms of stone in the bladder. The frequency of urination that is prone to occur in the day time, while the patient is up and about, agitating the foreign body within the organ and increasing the irritation that subsides so markedly when the patient rests quietly in his bed (this in contradistinction to the frequency from prostatic hypertrophy that occurs especially at night); the common occurrence of blood in the urine, especially at the end of urination; the characteristic stream, suddenly interrupted by the falling of the stone over the vesical outlet, plugging it completely and at once, permitting the renewal of the stream only when it is floated or jolted out of the way; then the resumption of the full stream, unless again suddenly interrupted in the same manner. When such typical symptomatology is followed by investigation with

* Read at the annual meeting of the Missouri State Medical Association, Excelsior Springs, May, 1905.

the stone-searcher, and the click and grating feel are obtained, the diagnosis is certain, and one almost wonders how it is ever possible to overlook or be misled about the diagnosis of a condition so clearly and distinctly defined; and one would hardly expect to meet with a case in which a stone as large as the one I herewith present for your inspection (Fig. 1, No. 34), had been left in a bladder, unsuspected, only two weeks before I first discovered and removed it; yet such is the fact. The patient was not only assured by the gentleman who had him in charge that his bladder was free of any foreign content, but he was strongly advised against consulting a "specialist" in his search for relief, as a specialist would certainly "want to operate on him, instead of curing him without operation, as should be done." A brief history of the case is as follows:

Case 1.—G. M. W., male, aged seventy years at the time of first conference on October 22, 1903. Some time during 1900 the patient began to note hesitancy and slowness of his stream, together with increased frequency of urination, especially at night. In August, 1901, while at Chautauqua, New York, there was sudden and severe difficulty in urinating, requiring the use of the catheter for a week or more. His condition was then considered so serious that he was sent to Buffalo, New York, where Dr. Phelps opened the bladder supra-pubically and drained it for three months, which secured much improvement. In 1903, at Lincoln, Nebraska, he had another attack of difficult urination, chills, fever, suppression of urine and unconsciousness for twenty-four hours (uræmic?). He was catheterized and irrigated regularly for several weeks, and incidentally was examined by the surgeon in charge, who told patient that there was enlarged prostate, but that further than that the bladder was clear. Two weeks later he came to St. Louis.

When he came to see me he was emaciated, weak, pale, and hardly able to walk. He was passing large quantities of pale urine, 1003 specific gravity, containing much pus and albumin, and several forms of casts. Physical examination showed a very considerably enlarged prostate, about five ounces of residual urine. The soft rubber catheter was obstructed on reaching the prostatic region; but the metal catheter of full curve entered the bladder, and on manipulation detected the gritty feel of a stone of good size.

While it was evident that some operation had to be undertaken to remove the stone, it was also apparent that any endeavor of that kind had to be minimized as much as possible, else the old gentleman would not stand it.

After a week's preparatory treatment, on October 28, 1903, under *local anesthesia*, by means of infiltration fluid, I made a supra-pubic incision into the bladder and removed the large stone which I now present. Its dimensions are $2\frac{1}{8} \times 1\frac{1}{2} \times 1\frac{1}{4}$ inches, and weight 13 drams and 23 grains. On opening the bladder about two ounces of pus flowed out

of the stone-pocket in the upper portion of the bladder. During the operation the patient was, of course, entirely conscious, but the anesthesia was so successful that he did not complain at all, in which respect he was very agreeably surprised, in that he had been very nervous and anxious as to the suffering which he thought could not be avoided.

Nothing was done about the prostatic obstruction at this time, except that it was felt to be caused by a prostatic bar at the posterior commissure. Complete drainage was established by means of two soft rubber catheters tied into the supra-pubic opening, with a continuous stream of saline solution running for the first twenty-four hours, and interruptedly thereafter for a few days. There was no depression from the operation; on the contrary, he became free from pain for the first time in two years, he said, and he was soon sitting up in bed, and then around the room. He visited my office in just three weeks after the operation, and had in the meantime regained much strength and spirit.

With the marked obstruction presented by the enlarged prostate there was little or no chance of the supra-pubic fistula closing, or of even approximate restoration of the urinary tract to normal; therefore, the effort at clearing up the obstruction was next considered. It was realized that the patient could not withstand much or severe operative interference; and since the obstruction was in the shape of a bar, it was possible that a Bottini incision would accomplish the opening up of the channel. Again, under local anesthesia, on December 8, 1903, a generous posterior electro-incision was made by the Freudenberg cautery; no pain or hemorrhage incidental to it. A few days later there was some gastric reaction, and temperature elevation to 103°. The opening of the urethral passage was demonstrated by filling the bladder through the upper opening and allowing the patient to pass it out the normal route, which he did in a good, full stream. Sounds were passed occasionally. With assistance of some renewal of the wound-edges and closure with the French metal stitches, the supra-pubic opening later healed, after which the patient recovered his ability to urinate voluntarily in a full stream and completely empty his bladder. He has been doing this for more than a year now, has recovered his general health, has taken trips both east and west, and lives in a comfortable manner, as he pleases, free from all urinary troubles.

The overcoming of the difficult conditions by operating in successive steps and without the use of general anesthesia, were both conservative and successful. He would probably not have lived through a more heroic plan of action; and a non-operative plan would not have secured any but temporary benefit, adding nothing to his fast-diminishing lease on life.

Some surprise may be occasioned by the fact that the bladder was sounded and so large a stone as this not found, hardly two weeks before his arrival in St. Louis. It is probable that the sound did not enter



FIG. 1.—Dr. Lewis's collection of Primary Calculi, reduced to one-fourth natural size.

far enough into the bladder to reach the stone; that its entrance was impeded by the large lobes and bar of the prostate, leading to the false conclusion that the viscus contained no stone.

The next case related is one that gave me a history strongly suspicious of calculus in the bladder, and with that suspicion in mind I examined with the stone searcher and failed to find the object of the quest; nevertheless, on applying additional methods of investigation I was successful in finding this stone, which I show you, and removed at a later date. (Fig. 7, No. 38.)

This, by the way, is quite a peculiar stone, a stone of crystallization, the whole surface being covered with sharp pointed spiculæ, of pure crystal formation like quartz, and it is no wonder, therefore, that the patient's most urgent complaint was with reference to the severe pain that occurred for fifteen minutes or a half hour after each urination, often requiring him to lie down for that length of time for relief. The spiculæ acted as so many thorns against the tender and inflamed mucous membrane of the bladder, especially at the end of urination, when the bladder became empty and contracted on them. I have never seen another stone of this formation.

Case 2.—T—e J—n. Aged fifty-seven, male. First conference March 16, 1904. German; married; merchant. For the last three years this patient had suffered from pain in the perineum, both during and after urination, and also on experiencing a jolt or jarring or rapid walking. This pain had gradually increased in severity until the patient could hardly attend to his regular duties. He had not noticed blood in the urine, although he had observed some sediment. He had noticed sudden stoppage of the stream, starting again later after waiting a few minutes, or on walking around the room. He had to urinate frequently, both day and night, but the most emphatic complaint was of the pain directly after urination; also, there was slowness in starting and difficulty in the passage of the urine. There were seven ounces of residual urine at the time of the first examination with the soft rubber catheter which entered the bladder easily. While this history gave rise to strong suspicion of stone, none was felt on introducing the Thompson searcher into the bladder, but when the retrograde cystoscope was placed in the bladder, it showed a beautiful picture of a rough, jagged stone of considerable size, lying deeply in the *bas fond*, behind the posterior commissure of the prostate. When this stone was removed by a perineal incision on March 23d, at St. John's hospital, it was readily seen why so much pain should have been experienced. It was covered with a number of sharp speculæ, pointing in all directions. It was closely attached to the bladder mucous membrane, so closely in fact that was removed from its nest with considerable difficulty and danger of tearing the mucous membrane. While it was being removed the finger had to be inserted through the perineal opening to peel the mucous

membrane from the stone. It is the roughest stone, and most irritating in its character, that I have ever observed. One can readily imagine the amount of pain that would be occasioned by the contracting together on it, of the bladder walls.

Following the operation there was satisfactory recuperation and the patient has been relieved of his pain and many symptoms, and has regained completely his general health.

In this case, no obstruction was found connected with the prostate, so that no operating had to be done on that organ.

That a stone of moderate dimensions may be of slow growth, and exist a long time without being discovered, the patient meantime passing through the hands of a number of the profession in different parts of the country, is illustrated in the case from whom I removed the accompanying stone. While no difficulties were presented in the detection of the stone by means of the searcher in this instance, and it might have been found as easily by anyone of those who saw the case previously, it is a fact that he had never been examined for stone before his first interview with me.

Case 3.—G. D. R—d, of Keokuk, Iowa, aged sixty-four; banker, American, married. Referred by Dr. Payne, of Keokuk, Iowa.

Symptoms in this case began four years before his first conference with me on July 13, 1903.

The symptoms were initiated by irritation in the bladder, that at first was only temporary, after which there was no trouble for six months, when there was a renewal of the irritative symptoms and clouding of the urine. Then Dr. Payne used boric acid solution as a bladder-wash for a time. Last fall he went to a sanitarium in Milwaukee, Wisconsin, where the bladder was washed regularly over a considerable period. On account of difficulty in urination, he had been using a catheter for the most part of the past year, drawing his urine off from three to six times in twenty-four hours. Physical examination showed no enlargement of the prostate, refuting what had previously been accepted as the diagnosis in this case. The stone-searcher readily came in contact with the calculus in the bladder, clearing up a diagnosis that seems to have been obscure for a considerable length of time. Operation July 13, 1903, by a perineal incision; the finger introduced into the neck of the bladder showed a marked contraction at the bladder neck—to such a degree that I could hardly enter the organ with the finger. To do away with this, the uterine dilator was introduced into the neck of the bladder, and successive stretchings did away with the narrowing at that point. After this, the forceps was introduced into the bladder, and the stone readily removed. (Fig. I, No. 36.) Double catheter continuous drainage was maintained as usual for twenty-four hours, after which it was interrupted and then removed altogether in about five days. There was union of the wound and

prompt recovery on the part of the patient, who regained his health and spirits.

Case 1.—F—k Z—n, St. Louis, aged forty years; engineer; German-American; married. Referred by Dr. H. M. Pierce, of St. Louis. First conference December 4, 1903.

One year previous to his coming, the patient first began experiencing the symptoms which gradually increased until the time of the final operation. They began with frequency and urgency in urination. The passage of urine usually gave considerable relief with the exception of some after-burning. Sometimes he found small clots of blood, but never bloody urine. The pain was most marked in the lower gluteal regions along the bottom of the penis. There was never any pain in the kidney or ureter regions, except one time when there was a sudden severe pain in the left lumbar region.

Three weeks before our first conference, the patient passed five little stones in one morning and three in the afternoon. Then, a week later, five more, and each day afterwards some passed. Altogether, he thinks, about twenty-five small calculi were passed voluntarily. A soft rubber catheter readily passed into the bladder, draining about one ounce of residual urine, cloudy and containing pus and blood. There was excruciating tenderness of the urethra and bladder. A stone-searcher detected a slight but definite stone click. Cystoscopy under cocaine anesthesia revealed a stone with phosphatic incrustations, a stone about the size of a hickory nut.

Under chloroform anesthesia, on December 16, 1903, the bladder was entered through the perineal incision. The neck of the bladder was found to be much contracted and was forcibly dilated by means of the uterine dilator. A stone was readily felt and removed. (Fig. I, No. 37.) A soft rubber catheter was left in for drainage, after which there was prompt and satisfactory recovery, complete disappearance of the symptoms that had persisted for more than a year previous to the operation, and regaining of perhaps sixty pounds in weight, with considerable improvement in general health.

Case 5.—Chris C—, of Missouri; aged fifty-eight; German; married; obstructive hypertrophied prostate and multiple vesical calculi.

This is another case in which there was both enlarged prostate with obstruction and multiple calculi, and yet the symptoms began only six months before his first consultation with me. He arrived September 26, 1904. Six months previous he first noticed blood in the urine, and pain in the back in both lumbar regions, radiating forward into the testicles.

At first the attacks of sharp, cutting pains would last only a minute or two, but later they became more severe and more prolonged, finally rendering him unable to pursue his work. At one time he passed two small stones through the urethra, and a week later he passed another stone. He gives the history of sudden stoppage of the stream in the

course of urination. The history was very strongly suspicious of stone in the bladder, and yet when I put the Thompson searcher into the bladder I could feel no click. I tried the same with the bladder empty, and later while it was filled with fluid, but in neither case could I detect the click of the stone. It was observed, however, that the searcher was rigid and badly borne, so that perfect examination with this could not be carried out. Under cocaine anesthesia, the next day at the Deaconess Hospital, examination by means of our retrograde cystoscope showed as plainly as could be, stones in the bladder, the largest the size of a pigeon's egg.

On October 5th the perineal incision was made in the bladder, and the prostate was first attacked. It was found to be exceedingly dense and hard, and no point of cleavage for enucleation could be discovered; consequently it was fairly tunneled through by means of biting forceps and periosteal elevator and scissors. Finally, a good-sized channel was made through the prostate, after which, by means of a stone scoop and forceps, three stones were found and removed from the bladder. (Fig. 1, Nos. 18 and 19.) Double drainage was maintained continuously for the next twenty-four hours. There was gratifying and rapid improvement, with no tendency towards contraction of the prostate urethra.

The patient within three weeks was passing a good, free stream, and completely emptying his bladder, leaving no residual urine therein. He returned to his home entirely comfortable, and his general health has improved accordingly since that time.

My failure to detect the stones in this case with the searcher was due mainly to the interference offered by the prostate in the rigidity with which it held the instrument, and also the acute tenderness of the urethra and bladder. Under chloroform anesthesia it is probable that they would have been felt by the searcher. It is worthy of note, however, that the retrospective cystoscope, which showed the stones plainly without touching them, did so without chloroform anesthesia. Under proper precautions the use of the cystoscope is not attended with more pain than that incident to the passage of a metal sound. The searcher is not more painful *in its passage*, either, but to be effectual for its purpose it must have freedom of movement within the bladder; it must *feel* the object, whereas the cystoscope has but to bring it within the field of vision from afar, so to speak.

Case 6.—J. D. M—e, St. Louis; male, aged fifty-five; American; married. Referred by Dr. Wheeler Davis of St. Louis. First consulted me January 1, 1905.

Notwithstanding the large number of calculi found in this patient's bladder when he was examined, the symptomatology, as described by him, began only six months before the time of his first conference with me on January 1, 1905.

He first noticed difficulty in urinating, together with undue frequency

of the act. He soon found it necessary to use a catheter, and for three months he had been using it three or four times daily. Two months before he had found three small pieces of stone in one day; none since that time. There had been no blood in the urine.

Five weeks ago, while driving a wagon, he was hit by a street car and knocked forty to fifty feet, since which time the bladder symptoms have been more severe than previously.

A soft rubber catheter was daily introduced into the bladder and drained four ounces of residual urine. A metal instrument readily gave the stone click. The retrograde cystoscope showed as many as six calculi, although we were unable to say whether there were more than that in the bladder.

On January 4th, under chloroform anesthesia, a perineal incision was made into the bladder, the neck of which was stretched with a uterine dilator, after which, by means of curved stone forceps, stone scoop, etc., eighteen calculi were rapidly removed from that organ. (Fig. 1, No. 26.) The stones varied from the size of a pea to that of a hazelnut. At the same time it was noticed that the prostate projected into the bladder from the posterior and lateral aspects, and these parts of the gland were removed through the same incision. Continuous irrigation by two soft rubber catheters was kept up for the first twenty-four hours.

The patient rapidly improved, and within two weeks was feeling better than he had been for a number of months previous to the operation. He had at the time of his first consultation been meager and weak, and possessed of very bad color. A month later he had improved in all these respects, and he has gone back to his work. The perineal opening has healed, and he has gained thirty pounds since the operation.

The next case to be related is remarkable from several standpoints. He had a remarkable number of stones, of considerable size, in his bladder; was the subject of obstructive hypertrophy of the prostate to a marked degree; and was humpbacked (kyphotic) to an extent that, in connection with his generally debilitated health, seemed almost to preclude any sort of operative interference; and, finally, after having opened the perineum and taken out a number of stones from the bladder—having a direct avenue of approach through this perineal opening—by using the sound or stone-searcher, I was unable to feel them, although there were *five more stones in the bladder at the time*.

Case 7.—W. S. McC., aged fifty-five; traveling salesman. When he arrived for first conference the patient was so debilitated and nervous that, practically, no examination could be made; he was, therefore, simply questioned and referred to the hospital, where he recuperated under the internal and local antiseptic measures applied and the rest he was made to take, after which a sound introduced readily gave the stone-click, and the cystoscope disclosed multiple calculi—so many that I

hardly believed the evidence it gave. An x-ray photo was taken by Dr. Carman, which shows the stones *en masse*, about the size of a closed fist.

On August 5, 1904, under chloroform anesthesia, the bladder was opened through the perineum, the prostatic urethra and vesical neck were dilated with the uterine dilator, after which, in addition to several stones presenting, the finger readily discerned three large, globular projections of prostate into the organ. While the removal of the prostate at first would undoubtedly have given better access for the removal of the stones, it was deemed necessary to be as conservative as possible, in view of the low vitality of the patient, and on that account the prostate was not attacked at that time. With scoops and forceps and fingers, about a dozen calculi were raked out of the bladder, one, two or three at a time, whereupon no more could be felt, either with the finger or the scoop. A stream of warm water was then run rapidly into the bladder, swelling it out, and as the water returned, bringing more of the calculi within reach, they were removed in a similar manner. This was continued until about twenty stones had been gotten out, when no more could be felt, even after several washings.

The washings and manipulations had consumed something like thirty or more minutes; it was not considered advisable to expend any further time in operative measures, even though it could not be determined positively that no more stones were left. A continuous stream of saline solution was kept running through the two-way drainage apparatus for the next twenty-four hours. There was no undue bleeding, no rise of temperature, and recuperation was as prompt as could be desired. A few small pieces of stone were washed out in the irrigations that were made daily in the next two weeks. Through the perineal opening a sound was inserted, but no stones were felt.

On August 20th, under cocaine anesthesia, the retrospective cystoscope was introduced through the same opening, and as pretty a picture was presented as one would wish to see, viz.: five little stones, lodged as if in a nest, underneath the overhanging posterior lobe of the prostate, in a position in which they could hardly be felt with a metal instrument, even though sharply curved. (Fig. 2.)

On August 23d the patient was again put under chloroform anesthesia, the perineal wound enlarged, the interfering posterior lobe of the prostate shelled out, and the balance of the calculi scooped out.

Recovery from this operation was as prompt as from the other, and the patient went to his home in Illinois on September 8th, and shortly afterwards entered on the discharge of his duties as traveling man.

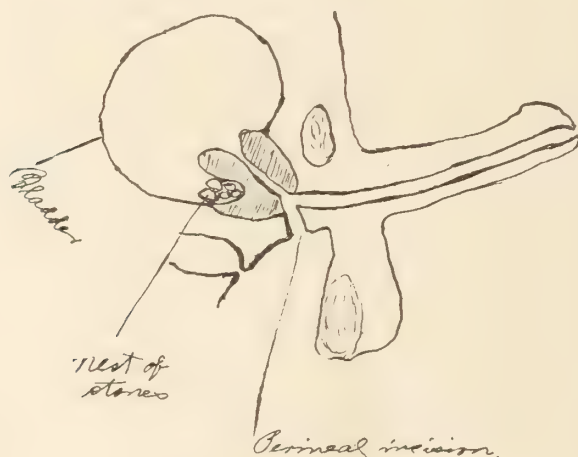
Successive visits showed that he recovered his ability to urinate with satisfaction (almost a pleasure, as he put it), and to completely empty the bladder; and the various symptoms of irritation all disappeared.

The total number of stones removed from this case was twenty-eight;

in size varying from that of a pea to that of a pigeon egg. (Fig. 1, No. 27.)

I have observed reports of a larger number of *small-sized* calculi being removed from the bladder, but I am not familiar with a case in which so many stones of considerable size were found in one bladder. Bangs and Hardaway say (page 417): "There are rarely more than five or six stones found, but cases have been reported in which three or four hundred small calculi have been met with." Keen, in 1893, removed four hundred and ninety-five very small calculi, the largest of which ranged twenty-six to thirty-two of the French catheter scale.

Before leaving this subject I wish to quote from Mr. Bruce Clark, who says (*British Medical Journal*, May 13, 1899): "There are no differential diagnostic symptoms which separate this condition from ordi-



nary cystitis. The difficulties in the way of diagnosis are enhanced by the fact that washing out of the bladder is quite sufficient, in many instances, to temporarily restore the urine to a healthy condition. In several cases the stones have been so thickly covered with mucous that they did not give an audible sound when struck with an exploring instrument. The fact that the presence of the stone was not known in half the cases operated upon and the difficulties that lie in the way of diagnosis, lead me to advise suprapubic cystotomy and exploration in all cases of cystitis that become chronic and rebellious to treatment."

If, now, we have learned by sad experience the necessity of adopting all of the accredited modes of research for stone in suspected cases—we have studied the history, have used the searcher and the cystoscope, and have failed to find evidence of stone in either the bladder or the urethra,

have we then fulfilled all the demands for comprehensive exploration that a chronic urinary case requires? What of the upper urinary tract? Or even of the lower? We have not excluded either of them. With respect to this question as it pertains to the lower tract, the following case teaches a forcible lesson; while it is not one strictly of calculus formation, it is so closely allied to it in its effects, if not in its nature, that it is related here:

Case 8.—Fr. L—d, grocer, aged forty-two years; was referred to me by the late Dr. T. F. Prewitt. The patient had pursued for sixteen years the endeavor to learn the cause of his urinary troubles, and had faithfully carried out many and various forms of treatment for their relief, but to no purpose. For all of this period of sixteen years he had suffered from pain in the bladder, perineum and urethra, severe burning in connection with urination; frequency of the act; recurrent chills and fever, evidently septic; and the urine was always heavily loaded with pus, and occasionally with blood.

At the time of our first conference, in July, 1900, while I did not discover the exact origin of the trouble, I advised what would have led to its discovery had it been adopted, that is, perineal section for exploration and drainage of the long-inflamed bladder. The patient declined any operative plan, desiring to be cured by medicine only.

We saw nothing further of him for three years, during which time he experienced the same disturbance to urination, and pain and recurrent fever and chills, and other indications of urinary sepsis.

In June, 1903, he came back again, under the advice of Dr. Prewitt, declaring that he was ready and willing to undergo any necessary form of treatment to get well of this harassing condition, which had troubled him for at least sixteen years.

The 22d of this month, after some preliminary treatment internally and locally with chloroform anesthesia, I incised the urethra through the perineum, running my finger into the prostate urethra, feeling the little sharp formations, which, on being taken out with the forceps and curette, were found to be the three little bony spiculæ that I show herewith. (Fig. 1, No. 25 M.) They were located in the substance of the prostate, on the posterior aspect of the urethra. They were thought at the time to be calcarious formations, and it was only afterwards, under careful examination, that their true nature was learned.

When he awakened from his anesthetic condition we learned that sixteen years previously he had met with some accident by which he received a severe contusion of the left hip. An abscess developed in the thigh, which was opened by Dr. Prewitt. There was a discharging sinus for a considerable length of time thereafter, and numerous pieces of bone emerged through the opening, which finally closed. A year after this some urinary symptoms made their appearance, and they continued until the time of the operation which was made in 1903. Evidently some of

the spiculae had wandered from the injured bone, and fifteen years previously had migrated into the prostate and set up the irritation of the prostate body and urethra that had never discontinued until removed by our operation. Now, later, we learned that this did not embrace the whole of the trouble. While the various urinary symptoms disappeared on his recovery from the effects of the operation, the urine remained purulent, indicating that the infection had extended up into one or both kidneys, giving rise to suppuration there.

I wished to make investigation with reference to this point, but the patient felt so much improved that he did not wish to undergo further investigation, and we have never yet learned the extent of the involvement of the kidneys in the trouble; nevertheless, he has regained his general health to a very gratifying degree. He suffers no more from the frequency and urgency of urination, and pain and septic fevers, etc.

Upper Urinary Tract.—With reference to involvement of the upper urinary tract, it is necessary not only to determine the existence of a stone at some point, but it is equally as incumbent to locate it definitely—as to whether it is on the right or the left side; in the ureter or the pelvis of the kidney, of one side or the other. The number of stones and their size are also of importance as having a bearing on the measures determined on for their removal.

The methods for arriving at these results relate to a close study of the symptomatology and, more important still, physical examination of the patient, embracing analysis of the combined and the separated urines (from the respective kidneys), palpation, cystoscopy, ureter-catheterization and the use of x-ray photography.

While stones in the upper tract have certain symptoms and signs more or less characteristic and indicative of their presence, these should not always be expected; they are entirely lacking in some cases, and surprisingly eccentric in others. It is well established that a stone located in the kidney pelvis or the ureter may present its most urgent indication in the bladder, or even in the opposite kidney; and it is also a sad fact that many a stone is born to blush unseen and undiscovered in the kidney until disclosed on the post-mortem table—an embarrassing testimonial to the fallibility of man and his scientific methods. I believe, however, that the lack of application of these methods will explain this occurrence much oftener than their failure to do good service when applied. I have in mind a case in which I hold myself seriously at fault in having failed to make investigation (ureter-catheterization) of the upper tract, because I found what seemed to be enough trouble in the lower tract to account for the urinary symptoms presented.

Case 9.—A. L. G—r, aged fifty-five. First consultation June 20, 1904. Referred by Dr. Amberland.

This case was a very complicated one, and obscure in a number of respects. There was much discussion among neurologists who had been

consulted as to whether it was one of traumatic neurosis or of pure neurasthenia. The history of trouble dates from June, 1901.

While traveling through Kansas on a railroad train there was an accident in which he received a severe jolting while lodged between the seats of the car, and a severe contusion of the left hip. Nevertheless, he went to work shortly afterwards.

In the fall of the same year he first began to have trouble with the bladder, and consulted his physician, who interpreted it as being some form of prostatic irritation. In 1902 he experienced a general nervous collapse, which continued during that year and 1903. There was inability to control his thoughts, to continue his work; there were pains in various parts of his body, in the right hip and the left side, and also severe pain in the bladder. He suffered so much about that time that hypodermics of morphia were used a number of times. He tried the use of the catheter for awhile, but obtained no relief. He consulted physicians and surgeons in New Orleans and Milwaukee, and neurologists in St. Louis.

Later he became unable to empty the bladder, and gradually developed from twenty or more ounces of residual urine. The urine became very foul and dense, filled with pus and highly colored. There was excruciating sensitiveness of both urethra and bladder, and the slightest manipulation was borne with great difficulty. No physical obstruction in the urethra was encountered except slight impediment to the catheter just at the neck of the bladder. The lense cystoscope could not be used with any satisfaction, because of the active bleeding within the bladder and the clouding of the fluid medium. The operative air-cystoscope was, therefore, used when it was noticed that a diverticulum led from the posterior wall towards the fundus of the bladder, the opening of which was apparently the size of a quarter of a dollar, and the capacity of the sacculation sufficient to hold one or two ounces of fluid. The cystoscope could not be made to reach into the diverticulum, because of the dilated condition of the main cavity of the bladder.

Because of the patient's very bad condition generally, his extreme sensitiveness locally, and the bad condition of the bladder in connection with the sacculation of that organ, it was not considered advisable or necessary to catheterize the ureters, and no further cystoscopic examination was attempted. The conditions already mentioned were considered sufficient to account for the urinary symptoms, so that it was considered inadvisable to pass the catheters into the ureters.

The patient was treated with bladder washes and dilatations of the neck of the bladder, notwithstanding which he made no improvement. Conferences were had with other physicians, who were unable to shed any light on the case. No complaint directly referable to the kidneys was made at any time. There was gradually increasing debility, recurrent fever, occasional chills, loss of weight and appetite.

Post mortem examination showed sacculation of the bladder as above detailed; chronic cystitis, but in addition thereto, something that had not been discovered before, namely, a stone in the substance of the left kidney, with consequent pyelo-nephritis and dilatation of the right ureter and kidney pelvis, probably resultant from the backward pressure from the contracted condition of the neck of the bladder.

The error in this case was on the side of conservatism. We should have examined more than we did; we should have introduced the catheters up the ureters, when we would have obtained purulent urine from both sides, indicating that trouble was located higher up than just the lower urinary tract. We could not have touched the stone in this case with the catheter, but a sufficient clue to its presence would have been given for the use of the x-ray, by which it should have been disclosed.

A more fortunate case than the preceding one is the following one of stone in the kidney:

Case 10.—C. B. H—n; claim agent; American; married; aged thirty-four years.

The diagnosis of the case is chronic prostato-vesiculitis and right calculous pyelitis.

This patient consulted a number of physicians and underwent a number of different kinds of treatment before being referred to me, March 31, 1904, by my friend, Dr. Lindenberg, of French Lick Springs. His symptoms began about one year previously, shown by irritation and frequency of urination, and bearing down pain in the region of the perineum and neck of the bladder. The symptoms were much more pronounced in the daytime than at night.

He made a trip to French Lick Springs shortly after the beginning of the trouble, which seemed to give him complete relief, but his symptoms began again three months ago. Since that time he has noticed much sediment in the urine, and often it has appeared to contain blood. A physical examination disclosed some swelling and acute tenderness of the prostate and seminal vesicles, which, therefore, first received our attention.

Treatment by means of prostatic massage, the hot-water siphon and internal antiseptics, diminished the inflammation that existed in the prostate and seminal vesicles.

Nevertheless there was considerable clouding and always blood corpuscles in the urine, the persistence of which led us to advise ureter catheterism in order to get the testimony of the urine coming direct from the kidneys. Double ureter catheterism was carried out on April 25, 1904. The urine from the left kidney was clear and free from abnormal elements, excepting a few red blood cells. These evidently came from the contact of the catheter. The urine from the right kidney showed a large amount of pus as well as blood corpuscles.

From the history of the case, it was suspected that the inflammation

in the right kidney thus shown, was due to a possible calculus. Therefore, Dr. Brokaw was requested to take an x-ray photograph of the two kidneys. The result was a shadow shown in the right kidney, indicating calcareous formation in that organ. On June 22d, under chloroform anesthesia, administered by Dr. Crandall at the Baptist Sanitarium, the right kidney was opened through the lumbar region by an oblique incision. After some difficulty, adhesions surrounding the kidney were severed and the organ brought into view. It was incised on the convex surface. A finger pushed down into the pelvis at once detected an angular stone of irregular outline, about as large as a hazel nut. This was removed and cleaned. A facet on one side indicated the existence of an additional stone which was also removed, and which was considerably smaller than the original one. (Fig. I, Nos. 33 and 35.) A rubber drainage tube was left in the kidney pelvis. The external wound was partly closed by silk worm gut sutures. The patient convalesced satisfactorily, and recovered from the effects of the operation without undue delay or difficulty. Later, it was found that there was some tendency to persistence of the inflammation in the right pelvis, but this was gradually overcome by repeated ureter catheterizations, and washing of the kidney pelvis with argyrol solution.

The patient has recovered his general health; he has gained forty pounds in weight, and carries on his work with renewed energy and satisfaction.

Cases in which kidney stone is diagnosed and sought for by exploratory operation, yet not found on opening the kidney, are numerous, indeed. Jacobson, of Guy's Hospital, reported twenty-five such cases—in which the symptoms of renal stone were present, lumbar nephrotomy was done and no stone found, the urinary symptoms having then been attributed to uric acid crisis and other affections. Henry Morris reports twenty-eight similar cases, in eleven of which nothing was found to account for the symptoms that had been interpreted as indicative of calculus.

It must be observed, however, that these cases were reported before the present era of ureter-catheterization and x-ray work. I believe that with these measures at hand, no surgeon will again report such a large series of such cases.

Without going into an analysis of all the signs of stone in the upper urinary tract, it may be mentioned that there are certain ones on which reliance may be placed; these are pain, hematuria and the evidence afforded by use of the ureter catheter and the x-ray.

Hematuria.—Hematuria, either in macroscopical or microscopical quantities, is practically always present where stone is present at some point in the urinary tract. I do not remember to have ever seen an exception to this rule. I have seen cases in which the urine looked, to the naked eye, quite clear, and without closer investigation it might readily

have been presumed that it contained no blood; but sedimentation and microscopical search have always demonstrated red blood cells in definite numbers. While the finding of hematuria does not necessarily lead to the diagnosis of stone, it serves a very useful purpose as confirmatory evidence, indicating, for instance, that the trouble has to do with the urinary tract rather than the liver or appendix; the appropriate examination then being carried out, the differential diagnosis should be determined.

Pyuria.—I have been on the lookout for a number of years to learn whether it were possible for a stone to exist in the kidney or ureter without the production of pus in the urine; in other words, whether pyuria is not equally as constant a factor as hematuria. I have also seen cases of urinary stone in which the urine was described as "perfectly clear," but in addition to blood corpuscles, many pus corpuscles were contained therein. While I can conceive it possible for stone to exist at some point, the channel becoming blocked or plugged below that point and by preventing drainage, preventing the passage into the lower tract of the pus or blood corpuscles; still I believe this is more or less a theoretical proposition, occurring practically never. A stone in a ureter does not permanently and completely block the passage of urine past it; while the stone itself may not be able to pass down, the ureter dilates sufficiently in addition to allow the urine to get through. I show here a section of ureter containing such a stone, from a case of multiple lithiasis, in whom I observed during his life, with the aid of the cystoscope, the urine to issue in the normal interrupted jets from each ureter opening.

I have therefore concluded, in my own mind, that both pus and blood are practically constant factors in this condition; although various symptoms of calculus might be present in a given case, I should hesitate to diagnose calculus without them.

Pain.—While the third of the triumvirate of characteristic indications of stone in the upper urinary tract may not be as faithful in its attendance on such cases, it usually makes up for such shortcomings by the vigor and aggressiveness of its attacks when it is present. Stone lodged in the kidney tissue does not cause as severe pain as when it is lodged in the pelvis or ureter, where it has room to roll around, subject to the movements of the body.

Interrupted renal or ureteral *colic* usually indicates that the stone has entered the ureter, or is engaged in its entrance, trying to pass down that narrow channel to the outer world. Whether it is very minute or of more considerable dimensions, does not determine the amount of pain experienced; the muscular ureter contracts down on it spasmodically, irritating the nerve ends and also causing backward pressure of urine behind it, to a certain degree. If the stone is small enough to get by the narrow isthmuses of the ureter, or the ureter relaxes sufficiently to

allow the crowding urine to push it long, possibly it may pass into the bladder—and the victim is fortunate. It is, however, well established that certain kidneys have been entirely destroyed from the prolonged retention of such small calculi, and in some instances without causing enough pain to attract attention to the kidney as the source of trouble. Dr. Caldwell, in *Railway Surgeon* for July 14, 1896, relates the very interesting history of his own case in which, although he evidently carried the stone in one kidney for upwards of sixty years, the pain occasioned was very erratic and served to delude the many diagnosticians of both this and the old country who were consulted during this long period. In this case the pain was located in the sacro iliac region; and exercise or horseback riding did not seem to increase its severity, contrary to the usual rule. The calculus was finally removed in 1895, by Dr. Murphy of Chicago.

This case and these facts about these several symptoms and signs serve to point the moral that I think is most useful and impressive in the study of these conditions—namely, that it is not the symptoms and general history on which we may expect to place reliance for diagnosis, but the *physical examination*. If, instead of analyzing symptoms for sixty years, in Dr. Caldwell's case, while he was suffering the torments that he so forcibly describes, the ureters had been catheterized and the x-ray applied, it is probable that the operation that finally gave him relief would have been advanced a number of years.

The proper and most direct mode of investigating a case suspected of having stone in the upper urinary tract, it appears to me, is (*a*) to study the history given; (*b*) learn anything from palpation that may be discovered; (*c*) analyze the mixed urine taken from the bladder; (*d*) introduce the cystoscope and observe the interior of the bladder (especially the appearance of the two ureter openings); (*e*) catheterize the two ureters, with the double object of noting an obstruction at any point in the channels, and of draining and analyzing the two urines as they come direct from each kidney; (*f*) if pus or a considerable quantity of blood show in either urine, have an x-ray taken, embracing both kidneys, ureters and the bladder. It must be remembered that a catheter passed up the ureter to the kidney, causes the appearance, usually, of more or less blood cells in the urine of that side merely from its mechanical impact; but it is usually not difficult to estimate the bearing this has on the individual case—by comparing the quantity of blood seen before manipulation with that incident to it. On this account, as well as for other reasons, it is always highly desirable to investigate the urine for blood and pus before any instrumentation has been carried out.

If calculus be impacted at some point in the ureter, the catheter will meet with obstruction at that point, and if, in addition, we find purulent and bloody urine coming from that side (and not from the other), the presumptive evidence of ureter stone is very strong. If the case be a

female, and we are using the wide-open cystoscope, we may employ the wax-tipped ureter-catheter, as advised by Dr. Kelly, and look for the scratch marks on the wax that are supposed to register the contact with the calculus. But, unfortunately, I believe the usefulness of this procedure is confined to the female sex and the short, open cystoscope, for when we try to pass the waxed catheter through the long channel of a male, cystoscope, of whatever design, its liability to be scratched or rubbed is so great as to make the test unreliable, to say the least.

The Segregator,—If properly and successfully used, the segregator is capable of draining the two urines independently from the two kidneys, and show pus or blood in one or other of the two urines; but it is not capable of giving the contact or obstructive indications of the stone that the ureter-catheter is. It is quite as liable to develop blood corpuscles in the urine from its mechanical contact, and I confess I have never been able to satisfy myself that complete segregation was attained, with no possibility of mixing the two sides. But when you have a ureter-catheter passed to the kidney pelvis of one side, and another to the pelvis of the other side, you *know* there is no chance of contamination between the two, even should the patient cough or strain to urinate, etc. As to a comparison between the painfulness of the two procedures, the choice is much in favor of the catheterization. As soon as the catheters are inserted the cystoscope is withdrawn, leaving the catheters to drain for a half hour or so, while in order to drain an equal quantity of urine with the segregator the whole metal instrument must be left in during that time, causing much complaint on the part of the patient.

I have asked my friend, Dr. R. D. Carman, who has had large experience in such work, to give me his estimate as to the present status of the Roentgen-ray examination for diagnosis, and he deems the advantages of the method to be as follows:

1. The examination is painless, no general or local anesthesia being necessary with resultant depression, etc.
2. No danger from traumatism or infection; the danger from burn is practically nil.
3. It gives the exact location of the stone, and, especially important, the number of stones present.
4. There is no exploratory operation necessary for diagnosis.
5. The negative diagnosis is as accurate as the positive, except in very stout patients.
6. It differentiates calculous nephritis from other conditions in neighboring organs.

The percentage of error in all cases skiagraphed, of the great number of operators, has been less than 3 per cent.; and in the majority of instances where there were erroneous negative diagnosis, the calculi were so small that they passed without surgical interference.

CLINICAL REPORT.

THE CURE OF CARCINOMA BY MEANS OF THE X-RAYS.*

BY DR. HEINZ WOHLGEMUTH, Berlin, Germany.

While there is very little doubt at the present day concerning the fact that superficial caneroids of the skin can be cured by the use of the x-rays, we have, on the other hand, to record a marked dissention of opinion regarding the curative effect of these rays upon deep-seated cancers. If we take the carcinoma of the mamma as an example, we find reports of cases positively cured by Skinner, Perthes, Daniel, W. I. Morton, Barney and others. In marked contrast with the experience of these authors, Lassar asserted here today that the Roentgen rays exert a distinct effect only to a depth of one-half of a centimeter, so that an ulcerated deep cancer may apparently heal on its surface, while, however, the rest of the tumor preserves its malignant character. It would seem that Lassar's view is confirmed by the microscopic sections demonstrated here by Unger. I beg, however, to dissent. The one specimen of Unger is taken from a cancer of the breast which has been x-rayed ten times. It is true that only to the depth of five millimeters the characteristic cancerous growth had disappeared and was transformed into typical scar tissue. But nothing more could be expected from only ten treatments. Unger failed to state how long each radiation lasted, what tube he used, whether hard or soft, at what distance the tube was held from the growth and a few other points which are of paramount importance in the consideration of the general qualification of x-rays in the treatment of malignant new growths.

It is my belief that actual demonstrations are more likely than theoretical argumentations to bring us nearer to the satisfactory solution of this important question, and I, therefore, take pleasure in presenting to you a patient who demonstrates beyond the possibility of doubt the fact that x-rays do have a pronounced curative effect upon carcinoma of the breast to the depth of three to four centimeters.

This patient is seventy-six years old. Seven years ago she first observed a nodule in her left breast, which within the next four years gradually increased to the size of a hen's egg. At that time it had reached the skin and formed a suppurating sore. A surgeon advised amputation of the breast, which was refused by the patient. She applied a boric-acid-zinc-paste to the ulcer at the time when she first came under my care in November, 1904. At that time she looked decidedly cachectic, complained of very acute pain in the left mamma which prevented her

* Paper read before the Roentgen Congress in Berlin, April, 1905.

sleeping at night, and caused her to moan, and at times to yell out loud while she was awake. Just above the left mammilla a tumor was found about the size of an apple, hard, movable against the underlying ribs, with an ulcerated surface measuring 6.5 cm. The sore bled easily, was covered with a yellowish-green secretion, no reddening of the surrounding tissue. In the left axilla a lymph gland could be felt, size of hazelnut.

Protecting the surrounding tissue, the tumor was exposed to the x-rays three times a week, five minutes each time. A hard tube was used in a distance of 25-30 cms., motor-quicksilver current interrupter. The following observations have been recorded: Most pronounced was the immediate effect of the radiation upon the pain. It gradually became less and disappeared after four weeks. From one treatment to the next the progress of the epitheliasation could be observed, which started from the edges of the sore and advanced centripetally. The ulcer became smaller and flatter by a reduction in the size of the tumor. After fifty-two applications of the rays, sore and tumor had completely disappeared and in its place is found a soft, flat scar. The enlarged lymph gland had disappeared about two and one-half months after the beginning of the treatment.

This tumor has not disintegrated under the influence of the rays as I have seen it do in a case of cancer of the uterus; it melted away; it has been resorbed like an acute inflammatory swelling. This particular form of restitution *ad integrum*, in my belief, is due to the careful dosage of the rays, a visible reaction of the skin having always been avoided. Once when the skin became reddened and patient complained of pain, I discontinued the treatment for one week.

The condition of the breast of this patient is today an ideal one; her general condition very satisfactory. Of course, I do not make any claims for a permanent cure. Too short a time has elapsed, and there is still a small gland above the left clavicle, which I shall remove for microscopic examination. I wish to repeat that I have presented this patient simply for the purpose of demonstrating that the x-rays can be used successfully even for deep-seated cancers if the proper technic is applied.

No answer can be given to the question as to how the rays affect the carcinoma, whether they inhibit the growth of epithelial cells or destroy them, or under proper dosage are capable of rendering the normal stroma cells more effective in combatting the malignant growth. Of course, if the radiation is pushed until the tissue becomes necrotic, and the surrounding skin shows the reactive reddening, the *modus operandi* is clear. Several observations seem to indicate that cancerous tissue shows less resistance towards the influence of Roentgen rays than normal tissue, so that the latter will exhibit but a slight reddening, while the former is thrown off in large necrotic pieces. This effect can, however, be obviated if, as I have done in this case, the rays are not permitted to produce

any noticeable irritation. It seems reasonable to assume that this mode of procedure lends valuable assistance to the leucocytes in their action of defense.

The return of the enlarged gland to its normal size is not so remarkable; this phenomenon has been repeatedly described. Of course, I am not in a position to offer you any proof whether the enlargement was due to a carcinomatous or a simple inflammatory infiltration.

ATRESIA OF THE VAGINA.*

BY GEORGE GELLHORN, M. D., of St. Louis.

Since modern obstetrical teaching has become more widely distributed, serious traumatism acquired during delivery have grown less numerous. Increased skill in applying forceps to the parturient woman prevents the fetal head from being impacted unduly long within a slightly contracted pelvis, and in consequence we no longer see frequently those extensive injuries to the soft parts caused by prolonged pressure and resulting in the formation of fistulae which, in the days of Marion Sims, were of so common occurrence.

I trust, therefore, that the following demonstration will present to you some features of interest. We have to deal with a patient in whom an excessive pressure of the child's head, augmented, perhaps, by some undefined manipulation on the part of the physician, caused necrosis of the vaginal walls. As a result the sloughing and subsequent cicatrization produced a complete atresia of the vagina. The patient in question is twenty-eight years of age. She has been married four years. Her only confinement took place two years ago. This confinement lasted two days, no instruments being used; but, to quote her words, the doctor "tore" her "with his fingers." The child was stillborn. Patient remained in bed three weeks and experienced no discomfort save some "straining" in urination or defecation. Intercourse was painful ever since confinement, and became entirely impossible during the last year. Menstruation, as the patient claims, has been more or less regular since delivery, and has shown no appreciable difference from its original type. For the last nine weeks, however, she has had no menstruation. At times there has been a slight pain in the lower abdomen, on the right side, and also some backache. Furthermore, she had incontinence of flatus and liquid feces.

The patient is of about medium size. Muscles and panniculus adiposus are moderately well developed. Upon examination the vulva was

* Demonstration of the patient at the meeting of the Medical Society of City Hospital Alumni, September 21, 1905.

found to be very small, as you will see in the circulating photographs, for which I am greatly indebted to the kindness of Dr. H. P. Wells. The urethral orifice is normal. On the right side of it, and a little below, there is a small abrasion of the mucosa, but without infiltration. Beneath the meatus urinarius the entrance to the vagina is closed by a dense cicatricial membrane, which is situated immediately behind the normal site of the hymen, the latter, however, being absent. At the base of this membrane, situated in the vestibule, there is an oblong opening, the largest diameter of which is about one-third of an inch. A sound passes through this opening into the rectum, and, when given the proper curve, and assisted by a finger introduced into the rectum, glides behind the membrane into a short and spacious vagina. In other words, there is a large rectal fistula which, by the occluding membrane from above, as if by a gate, is incompletely divided into a recto-vaginal and recto-vestibular fistula. At the bottom of this fistula a valve-like fold of the rectal mucosa can be seen and easily be pushed downward. The menstrual blood then, if we accept the statement of the patient, must have passed from the uterus through the recto-vaginal fistula into the rectum and thence, guided by the above mentioned fold, reappeared through the vestibular opening of the fistula, at the foot of the occluding wall.

The rest of the genital organs were but little affected. Upon recto-abdominal examination the uterus was found in ante-flexion, and of normal size and mobility. Both appendages were sensitive to touch; the ovaries were rather low but not enlarged, nor was there an enlargement of the tubes noticeable.

The operation took place August 12, 1905—*i. e.*, about six weeks ago. The occluding membrane was incised and dissected out of the surrounding normal tissues. In doing so, the area of cicatrization was found to be much larger than at first suspected. A broad ring of scar tissue took the place of the vaginal lumen and extended deep into the para-vaginal tissue and close to the bone. The vagina behind the cicatricial area was about one and one-half inches in length and lined with a normal, but very pale mucosa. The cervix pointed forward. After the dissection of the scar tissue, which caused copious bleeding, the edges of the rectal fistula were denuded and the opening, measuring about the size of a dollar, when fully exposed, was closed with two layers of continuous cat-gut suture. Then the annular wound resulting from the excision of the scar tissue was covered with interrupted silk sutures. In order to reduce the excessive tension, flaps were formed from the labia and turned inward after extensive episiotomy incisions had been made on either side to gain sufficient room in the exceedingly narrow vagina. The operation was, of necessity, a very tedious one owing to the limited space in which to operate, and to the time required for the numerous sutures.

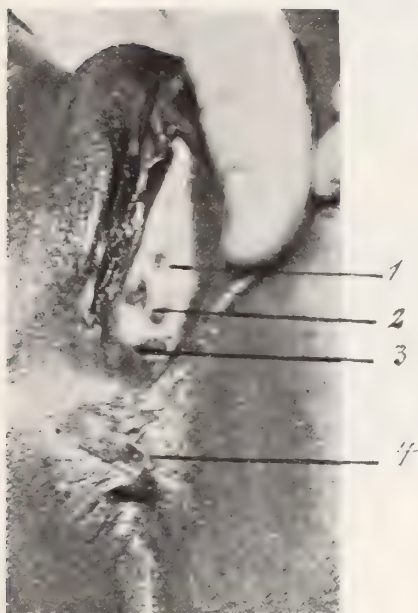


FIG. I.

1. Urethral orifice.
2. Occluding septum.
3. Rectal fistula.
4. Anus.

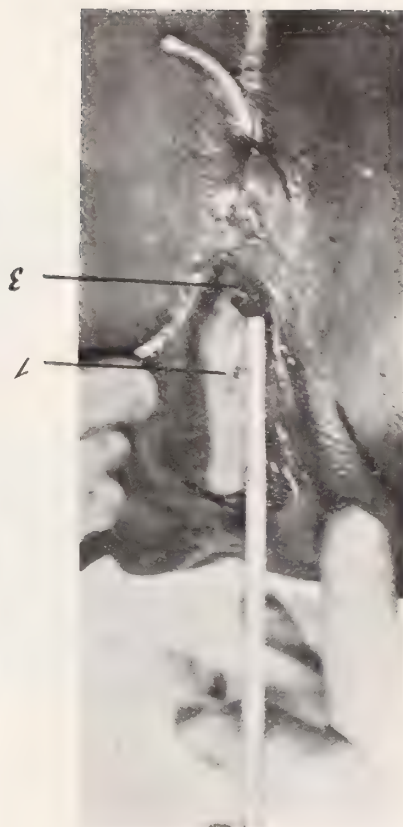


FIG. II.

1. Urethral orifice.
- A sound passes through the opening (2) into the rectum.

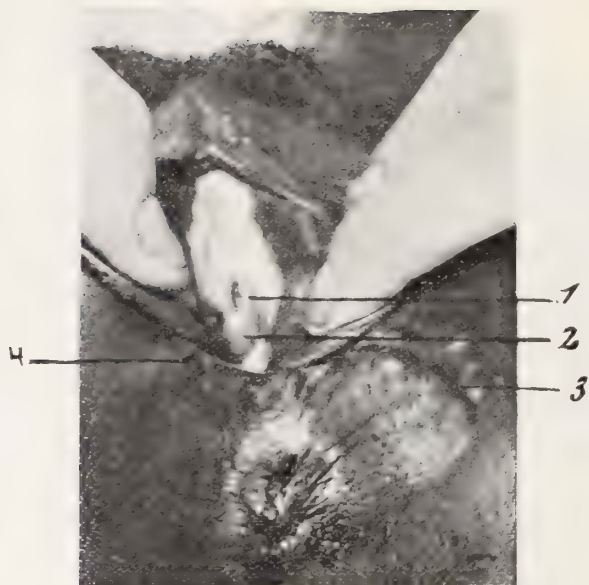


FIG. III.

Condition six weeks after operation. 1. Urethral orifice. Below the urethral swelling (2), the normally wide entrance of the vagina is seen. At 3 and 4, linear scars of the episiotomy incisions; between the latter a normal frenulum.

After operation, owing to the invagination of the labia, the vagina presented a peculiar appearance, the lower two-thirds black, the upper end pale white.

Convalescence was undisturbed. Primary union took place, and beginning on the tenth day after operation, gradually increased stretching of the narrow vagina was made with Hegar's dilators to a size a little over an inch in diameter, for several hours.

In the meantime, the retraction of the flaps on the vaginal walls has brought the line of union nearer the vaginal orifice, and the resulting shortening of the vaginal walls has produced a retroversion. Unfortunately, patient is anxious to leave for her home in Arkansas and has not consented to another operation.

Upon examination of the patient, you will find the vagina to be of normal width. The rectal fistula has completely disappeared, and the operation has left no trace save the linear scars of the episiotomy incisions.

The salient points of this case are :

1. The mode of origin of atresia.
2. The peculiar formation of occlusion and fistula.
3. The tortuous path of the escaping menstrual blood.
4. The successful elimination of all scar tissue and the restoration of the parts to their normal condition.

EDITORIAL COMMENT.

THE PATHOLOGIC EXAMINATION OF A CADAVER 113 YEARS OLD.

An interesting feature of the delivery to the United States of John Paul Jones' body has not received the general attention it deserves. In a letter to the *Deutsche Medizinische Wochenschrift*, Dr. Schober, of Paris, describes the identification of the admiral's remains. John Paul Jones was buried in 1792, at Paris, in the cemetery for foreign Protestants. When the Hotel de Ville burned, in 1871, the ground plan was destroyed, so that the location of the grave could no longer be ascertained. As the cemetery had long since been built over, it was necessary to burrow under the foundations of an entire row of houses, which greatly added to the difficulty of the undertaking. The only guide that could be offered the searchers was the knowledge that the admiral had been buried in a leaden casket, a rare honor in those days. Several such caskets were found, one of which contained a body corresponding in general to the size and build of our hero. Two Parisian physicians, Capitan and Papillault, undertook the difficult task of identifying the body. They had as their data certain more or less well-founded traditions and a cast of Houdon's bust of Jones. They found the mummified body to be that of a man, forty-five years old, with brown hair that was beginning to turn gray, and about five feet five inches high, all of which corresponded to the tradition of John Paul Jones' appearance, as did also the general appearance of the face. Anthropometric measurements were then made, which corresponded strikingly with those obtained from Houdon's bust, the two never being more than 2 mm. apart. Thus, in the body, the distances from the edge of the hair to the subnasal point and from there to the chin were 12.9 and 7.4 cm.; in the bust these measurements were 12.7 and 7.5 cm. The other measurements coincided even more precisely. Finally, the services of pathology were enlisted in the task. It was known that the admiral had suffered during his last days from a dropsy that had begun in his feet and had spread upwards, involving finally the entire abdomen. Moreover, he was known to have died of a pulmonary affection involving chiefly the left lung. Now, it happened that before being sealed up in the leaden casket the body had been treated with alcohol, so that when it was recovered the viscera were still soft and fairly well preserved, being only a little shrunken and browned. Microscopic sections of the organs could be made almost as from a fresh cadaver. This task was entrusted to Prof. Cornil, of the Parisian medical faculty. He was able to report the presence of a diffuse glomerulitis in the kidneys, and made the diagnosis, advanced chronic interstitial nephritis. The liver parenchyma was nor-

mal. Macroscopically as well as microscopically areas of broncho-pneumonia could be made out in the left lung. The anamnesis and the autopsy report thus corresponded perfectly, although they were separated by more than a century. A positive identification of the body could accordingly be made.

A MEDICAL PHASE OF THE LABOR PROBLEM.

The modern tendency of therapeutics towards prophylaxis is so well recognized that it is no longer a question in what direction the great advance in the future will lie. For the greater facilitating of this advance it is essential, not only to investigate the aetiological factors directly concerned in disease, but likewise those that may be termed, for the present at least, the indirect factors.

The influence of trades and professions upon the causation and progress of disease has long been recognized, and there has grown up an important, though not a very extensive literature dealing with the subject. As a rule, however, studies in this direction have been limited to the consideration of direct agencies, such as hygienic conditions, hours, various toxic substances used in the making of articles, etc.

A closer consideration of the whole question reveals, however, a number of other agencies belonging to the above category which merit attention and which has received practically none. These factors have to do with the personal side of labor questions and find their place, or should do so, in the discussion of the problems which are considered strictly within the limits of the economics of the labor question itself.

It is fairly well recognized that the stress of modern business conditions, from the capitalistic point of view, carries with it certain causative agencies which are directly of importance in the production of functional diseases of various sorts, and indirectly produce a favorable soil for the development of other diseases towards which a more or less generally recognized tendency may exist. For example, arterio-sclerosis and nephritis may be actively favored by the worry and excitement of business competition. It is not so well appreciated, however, that the factory hand meets in his work some of the same kind of stress, translated for him into similar causative agencies for the production of the same kind of morbid states. The economic problem concerning the eternal struggle between labor and capital has its effect upon the laborer also, and not merely in questions of wage, hours and tenure of employment.

To note only one phase of this interesting subject, it might be asserted without much need of supportive testimony that there is a distinctly medical side to such a question, for instance, as piece work problem in factories.

It has been observed that the piece worker more easily develops functional nervous diseases of various kinds than the week worker or the

worker whose output is limited by the measure of the inferior workman. The reason is easily seen. The premium set upon the increase in the productive power of an individual leads to the using up of the reserve power which should be the emergency store to be saved for other things.

There follows in workers of this type the same train of symptoms exactly which will take place in the case of the employer under the same conditions. From a medical point of view which, in this instance is also the economic point of view, the trade union is upon safe ground in its claim that the producing capacity of any individual should not be measured by the most capable, but by the average worker, if not by the least capable. In this instance the independence of the laborer to a choice of other work or other conditions should not be taken for granted as an opposing argument because in the sense that it exists for his employer it has no place in his life as a workman. In the case of a factory hand, and it is in his case that the question here being considered finds its chief illustration, there is given practically no choice without its use being costly.

While it is readily admitted that in questions of this sort the medical point of view at present has practically no place, it will be as readily admitted that theoretically at any rate it might have. Acquaintance with this side of the question might be the means of a better appreciation of the problem, and certainly it is of value to the physician in attempting to understand the origin of certain vague sets of symptoms seen among factory hands.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

The Pathogenesis of Chronic Ulcer of the Stomach.—BLOCK (*Deutscher Medicinische Wochenschrift*, No. 32, 1905) attributes the fact that round ulcer of the stomach is found most frequently on the lesser curvature and pylorus to anatomical relations, which he has observed in stomachs fixed and examined immediately after death. These portions of the stomach have the same appearance in the dilated as in the contracted state, while the muscles of the other portion contract firmly and thus protect its mucous membrane from the action of the gastric juice. In the muscles of the new-born, dying from gastroenteritis, are found ulcers which had originated from hemorrhagic erosions. The epithelium seems to be seriously damaged through hemorrhages to the mucous membrane. He does not believe that bacteria play any role in the production of ulcer.

Ulcer and Cancer of the Stomach; Their Relationship.—GRAHAM (*Boston Medical and Surgical Journal*, August 31, 1905) reviews in this article the statistics presented by various authorities bearing on the relationship between ulcer and carcinoma. The results of this review, together with his own clinical experience, lead to the following conclusions: The very great majority of ulcers of the stomach are located at the pyloric end. The immediate pylorus comes first, the lesser curvature second. A small per cent. is found elsewhere, few at the cardia.

The great per cent. of cancers of the stomach is found at the pylorus and lesser curvature (pyloric end); that is, the same locations find the greatest number of each.

Quite a large per cent. (50 to 60) of patients suffering from carcinoma give three or more years of a pre-cancerous history. A growing per cent. of cancer cases are found with short histories and ulcer demonstrated as the earlier lesions. A certain per cent., if small, of short ulcer histories leading to acute pyloric obstruction, where the ulcer must have been present for quite a period, and latent. Ulcers may be present for an indefinite period and no symptoms follow until obstruction, perforation and hemorrhages appear, if the acidity is low or absent and the ulcer locates itself along the lesser curvature, or near the pylorus. Cancers may develop under the same gastric conditions and only manifest themselves when obstruction or systemic poisoning makes itself felt.

What is most needed is better and earlier diagnosis in both ulcer and cancer of the stomach, so that non-medical cases may be reached by the surgeon when most may be promised.

A Study of the Mesenteric Glands in Their Relations to Tuberculosis.—ROSENBERGER (*American Journal of Medical Sciences*, July, 1905) investigated the mesenteric glands in seventy cases. Of these, forty-nine were tuberculous and twenty-one non-tuberculous.

These glands were normal in seven, enlarged in twenty-two, and tuberculous in twenty of the forty-nine cases in the tuberculous group. Of the twenty-five cases in which there were both pulmonary and intestinal lesions, 60 per cent. of the glands were tuberculous; of the eighteen cases in which there were pulmonary but no intestinal lesions, about 28 per cent. of the glands were tuberculous.

In the non-tuberculous group, including twenty-one cases, it was impossible to demonstrate any gross lesions. These died from a variety of causes, among which were typhoid fever, dysentery, and other diseases liable to cause enlargement of the mesenteric glands. The examination for tubercle bacilli gave negative results in all of these cases. However, guinea pigs were inoculated with bouillon in which glands from each case were macerated. Six of the pigs showed distinct tuberculous lesions. In other words, in 40 per cent. of the cases the mesenteric glands of the non-tuberculous group were shown to contain matter capable of producing tuberculous lesions in guinea pigs.

The author concludes that in all cases of active tuberculosis and in almost all cases of inactive tuberculosis, the mesenteric glands are tuberculously infective; that the mesenteric glands in these cases may or may not show gross evidence of tuberculosis or tubercle bacilli in spreads, the result is the same as far as the qualitative production of tuberculosis is concerned; that the mesenteric glands, in a certain percentage of cases showing no tuberculous lesions in any part of the body, are tuberculously infective. In the present study the percentage was about 40; that the tuberculous infectivity of the mesenteric glands is probably shared by the other groups of lymph nodes throughout the body.

A Study of Cardiac Dilatation.—SELIG (*Wiener Klinische Wochenschrift*, No. 32, 1905) finds that those cases of dilatation of the heart which may be referred to as congestive dilatation (Stauungs dilatation), often possess relatively good functioning power. Many football players have albumin and casts in the urine after severe playing for an hour or two, and this the author considers the manifestation of beginning cardiac insufficiency. The best way to judge the state of the heart's action is from the general impression gained after severe physical exertion on the part of the patient, and not altogether from the pulse rate or changes in blood pressure.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

The Results of Interscapulo-Thoracic Amputation for Malignant Tumors.—JEANDRAU and RICHE (*Revue de Chir.* No. 8, 1905).—In considering the results of this formidable operation the authors divide these into two classes. In the first class they consider the immediate dangers of the procedure, and in the second the permanent results as regards the ultimate freedom from recurrence. In order to get at material for their paper they addressed letters to sixty of the leading surgeons of France, England, Germany, America and Switzerland. From their answers they have succeeded in tabulating some very interesting facts based upon a study of 188 cases. As extensive as such an operation is, it cannot always be considered radical, for the reason that such patients frequently refuse early treatment which is so mutilating, and wait until the tumor has invaded the chest wall or the lymphatic structures within the thorax. Almost always, however, there is a sufficient temporary benefit to repay one for the operation, and, as will be later shown, there are many instances in which permanent cure is proven by many years free from recurrence. In these 188 such cases the immediate mortality was 11.1 per cent. It is interesting to compare the mortality previous to 1887 with that which has been experienced since that time. During the early period thirty-five cases gave a mortality of over twenty-nine per cent., whereas 153 of the later cases gave a mortality of a little less than eight per cent. This must, of course, be due in a great measure to the introduction of antiseptics and, more laterally, of asepsis. Of the last 188 cases the microscopic examination verified the findings in 125. Of these 125, ten patients died as a result of the operation, and ten more could not be followed later. Of the remaining 105, sixty-one lived only twenty-one months, twenty-two were still alive five years and two months after the operation, and the remaining twenty-two lived four years. Quite a number of patients have lived an astonishingly long time after the operation free from recurrence. It is stated that some survived ten, some thirteen, some fifteen, one sixteen and one twenty-six years after the procedure. This, of course, is sufficient to more than enable an author to speak of a radical cure. This article contains a very extensive statistical review of all of the cases reported by the sixty surgeons in question, and will more than repay one for a careful perusal of the same.

Ligation of the Internal Jugular Vein.—DANGEL (*Beit. f. Klin. Chir.*, Band 46, Heft 2).—In olden times the ligation of large veins was regarded as a very serious matter, because the surgeon had to fear the infection and purulent liquefaction of a thrombus, embolism of the pulmonary artery, pyemia and secondary hemorrhage. Of course, now this is all different, and the chief danger which we have to combat is that of circulatory disturbance. This latter question comes especially into consideration when we have to do with the brain, since the anastomoses

between its veins are scarcely able to take care of any additional work imposed upon them. An interesting case in this connection is reported from the clinic of Professor Garre. The patient was operated upon for malignant disease of the face and neck, the procedure necessitating the ligation of both internal jugular veins. There was a very slight amount of circulatory disturbance, strange as this may seem, though the patient did die four weeks later of erysipelas. At the autopsy it was shown that the vertebral veins had to a great extent taken the place of the ligated jugulars and that collaterals had formed in the vicinity of the foramen magnum. The fact that such a ligation could be borne by the patient is probably explained by the pathological finding at the operation. It is stated that the tumor had considerably constricted both veins, hence there was probably already some development of the collaterals before the ligation. It is well known that very many patients have one of these veins ligated without any ill effect, still it must be kept in mind that no less than three cases are found in the literature in which such an operation has produced disturbance enough in the brain to cause death. The author states that his case is the only one of its exact kind to be found in surgical literature.

A Remarkable Collection of Foreign Bodies Removed from the Stomach.—

HAROLD H. R. MCLEOD (*The London Practitioner*, September, 1905).—When first seen the patient had a painful swelling a little above and to the left of the umbilicus. This was apparently of an inflammatory nature and there was fever. The tumor increased in size day by day; fluctuation appeared, and hence an exploration was undertaken. It is interesting to note that the patient had confessed to swallowing foreign substances with suicidal intent, consequently the surgeon's mind was attracted to the most probable cause of the new formation. After opening the abscess it was found to communicate directly with the interior of the stomach; a dressing forcep was introduced directly into the opening and a vast collection of small articles removed through it. There were found hairpins, safety pins, nails, screws, tacks, pins, pieces of glass and chalk, coins and other articles too numerous to mention. The stomach walls were found to be very thick and vascular and the site of the perforation shut off from the general cavity by adhesions. The gastric fistula could not be controlled and the patient died from leakage a few weeks later. It is interesting to note that the patient went about her ordinary household duties and ate her usual quantity of food during all the weeks that she was swallowing these foreign substances.

Resection of the Superior Cervical Sympathetic Ganglion in Trifacial Neuralgia.—DELBET (*Bullet. et Mem. de la Soc. de Chir.*, Tome XXXI., No. 37).—The author opens his article by remarking that this operation is worthy much more serious consideration than he had formerly given it. He concludes thus after trying it on three cases, whereas formerly he was very skeptical and scoffed at the possibility of its being efficacious. With the exception of the pneumogastric there is no nerve more closely connected with the sympathetic than is the trigeminus. Many of these connections are necessarily separated when the superior ganglion is removed, although the author is unable to explain

just why this benefits conditions depending upon the integrity of the fifth nerve. In the first of Delbet's three cases, he had formerly done an incomplete removal of the Gasserian ganglion. After this the patient had remained well about eight months, when the disease recurred and removal of the sympathetic was then attempted. After the second operation it was two weeks before relief was noticed, and then the patient grew rapidly better until he was entirely free from pain, and has remained so, with slight intermissions, for more than three years. Occasionally he has pain for a few days, but it is not extremely severe. The second and third cases are too recent to prove anything permanently, but it must be stated that so far, that is, during the few months since the operation was performed, the patients have been very much better than prior to the undertaking. Still, it is to be noted that now and then mild attacks of pain are to be noted by them. The general surgical public will no doubt be very guarded as to the acceptance of this as a routine treatment for trifacial neuralgia. It will be remembered that only a few years since French surgeons lauded to the skies this same procedure for the cure of epilepsy, glaucoma, exophthalmic goitre, and almost anything else when a patient could be found who was willing to submit himself to the procedure.

The Technique of Lateral Entero-Anastomoses.—KUESTER (*Centralbl. f. Chir.*, No. 33, 1905).—The suggestion embodied in this article is that in making the lateral anastomosis with the Murphy button, each half of the button should be inserted separately into the open end of the small bowel, a slit made, the neck of the button pushed through, the two halves clamped together without purse-string sutures, and the open gut ends closed. This is, as all know who are doing any intestinal surgery, a most admirable procedure, and the remarkable part about it is that Professor Kuester, the head of a German university surgical clinic, should have taken this late day for publishing this as an original suggestion, years after so many other surgeons had been using it. Identically the same procedure was suggested in German literature several months ago by Sauerbruch, of Breslau, in his article on the resection of the esophagus.

The Radical Treatment of Cancer of the Rectum.—HARTWELL (*Annals of Surgery*, September, 1905).—The author has collected the history of forty-six cases operated upon by himself and other New York surgeons, and has arrived at conclusions which, based upon so much material, are valuable, to say the least. The operating mortality was twenty-six per cent., and more than half of those who died did so of sepsis in one form or another. This, as the author states, can certainly be avoided by deflecting the fecal current in some way from the field of operation. In only one case was there infection when this had been properly done. Sixteen per cent. of the patients are perfectly well more than three years after the operation, more than enough to warrant the procedure. In half of all the cases it is impossible to save the sphincters, and in the other half, where this may seemingly be attempted, the innervation of these muscles is so much interfered with that there is still no adequate control. Hence the author recommends, as have others of vast experience, that no attempt be made in these cases, except in very rare instances, to

preserve the sphincters. A properly made inguinal colostomy gives a better functional result, and should be done, the author says, as follows: The upper sigmoid end should be brought out of an intermuscular McBurney incision, and then drawn across between the rectus muscle and its anterior sheath and anchored in a slit in the median line. He considers that the operation is best done at two sittings, the second being undertaken two or three weeks later and completed from below, the coccyx and the lower portion of the sacrum being removed, after which the peritoneum is opened and the rectum and lower sigmoid segment are brought down. The detailed histories of the above forty-six cases are given, and the article is in every way a most thorough and instructive one.

Pleurotomy Through a Posterior Vertical Incision.—MOTY (*Gazette des Hôpitaux*, August 29, 1905).—The idea is here, as one might suppose, to empty the chest at its most dependent portion, with the patient lying down. This point is found on the seventh, eighth or ninth rib, about two fingers' breadth from the spinal column. So the author proposes that we make an incision about midway between the angle of the rib and its articulation with the spinal column. The arm is naturally to be drawn well toward the front, thus pulling the shoulder-blade over and exposing nicely the surface which is to be the field of operation. If sections of two ribs are removed in this line a good sized drain opening is established, and the author states that of twelve cases so treated, nine have recovered in a most satisfactory manner. The patients are very comfortable when lying down, the drainage tubes do not easily get out of place, and there is less movement of the ribs after operation than when the incision is made in the axillary line. Then, if the tube does perchance fall into the pleural cavity it remains at the site and can be most easily fished out again.

The Favorable Time for Operation in Appendicitis.—KOERTE (*Archiv. f. Klin. Chir.*, Band 77, Heft 3).—The exact diagnosis of the pathological condition of the appendix cannot be made in the acute attack. Indeed, all the symptoms can mislead us, but of these the most reliable is muscular tension. In Koerte's work the mortality was 18 per cent. during the first two days, and 36 per cent. when the operation was done upon the third day. From this it is very easy to conclude that the operation should be done during the first forty-eight hours, if this be possible, and should be avoided later than this time if it is possible to get the patient over the interval. Later consequences of the attack are abscess, phlebitis, subphrenic abscess, pyelitis, empyema and dangerous adhesions. Most of the above, as the author very rightly states, can be avoided by a properly done early operation. After the third day a simple opening of the secondary abscess can be done with a mortality of little more than 5 per cent., although a radical operation late in the attack is about 16 per cent. mortality. Where there is paralysis of the bowel the mortality is 60 per cent., but is 77 per cent. where no operation is done, the conditions being similar. For interval operations the mortality is only 1 per cent. These figures are certainly of value to any surgeon in choosing his time for operation.

DIAGNOSIS.

IN CHARGE OF

A. E. TAUSSIG, M. D.

A New Test for Acetone in the Urine.—V. FROMMER (*Berl. klin. Wochenschr.*, 1905, No. 32).—Although we have at our disposal a number of tests for acetone, none of them can be regarded as entirely satisfactory when applied to the urine. Some of them can be applied only to the distillate from the urine, during the process of obtaining which the diacetic acid, if present, is converted into acetone, or the tests, as in Lieben's iodoform reaction are positive also in the presence of alcohol and aldehyde. Frommer claims that his test obviates both of these sources of error.

The test consists in rendering the urine strongly alkaline with potassium hydrate, adding a few drops of a 10 per cent. alcoholic solution of salicylaldehyde (1 part salicylic acid + 10 parts absolute alcohol), and warming to about 70 degrees C. It is best done as follows: Into 10 c. c. urine, 1 gram KOH is placed; before solution has been effected, 10 to 12 drops of the reagent are added and the whole gently warmed. Where the strong potash solution at the bottom of the test-tube comes into contact with the lighter supernatant liquid, there appears, in the presence of acetone, a dark red ring. If the salicylaldehyde is added after the KOH has gone completely into solution and has mingled with the urine, the fluid, if acetone be present, assumes successively a yellow, reddish, purple red and finally a carmine color. The reaction takes place more rapidly if the fluid is heated. In the absence of acetone the color of the mixture is unchanged. Neither diacetic acid, unless already split into acetone, nor alcohol and aldehyde will give a positive test. The reaction appears if as much as 0.000001 g. acetone be present in 8 c. c. of urine. The test is thus extremely delicate, and if it is true that it has no important sources of error, it will doubtless become one of our routine urinary methods. For the rationale of the reaction, formulæ, etc., the reader must be referred to the original article.

Diagnostic Puncture of the Lung in the Pneumonic Form of Tuberculosis.—GOGGIA (*Clin. Med. Italiana*, 1905, No. 3; *Gaz. des Hop.*, 1905, No. 91). Goggia has performed pulmonic puncture with aspiration in two cases of tuberculous pneumonia. In both he was able to demonstrate the presence of tubercle bacilli in the aspirated material, and in one found, in addition, virulent diplococci of Fraenkel. He considers this the most certain method of determining the nature of a pulmonic infiltration, especially when the sputum gives no positive information. It would seem, however, that the risk of opening new avenues of infection to the tubercle bacillus should prevent the general adoption of this procedure.

A Source of Error in Gastric Analysis.—V. BARTENSTEIN (*Berlin. klin. Wochenschr.*, 1905, No. 33).—When the gastric contents are aspirated

for the purpose of chemical examination, only a portion is usually obtained, another and often a considerable portion remaining in the stomach. It has hitherto been assumed that the degrees of acidity of the portion aspirated and that left behind are identical, or at least that any difference in acidity is so small as to be negligible. Indeed, the method of Mathieu and Remond for the determination of the amount of stomach contents is directly based upon this assumption. The writer, however, has aspirated the gastric contents in a number of cases in two portions, and has found very different degrees of acidity in the two. In four cases the first portion was the more strongly acid, the differences being 8, 18, 22, 38; in nine cases the second portion was the more acid, the differences being 6 (twice), 18, 20 (twice), 22 (twice) and 48. It would thus seem that the degree of acidity found in the expressed gastric juice can be assumed to represent the actual condition only where we can be sure that we have expressed practically all the contents, which will rarely be the case, or where a number of successive test meals give practically identical results. Perhaps the observation, not infrequently made, of hyperacidity without symptoms or of a hyperacidity history with normal stomach contents may be so explained. In any event, the determination of the volume of gastric contents by means of the comparison of the acidity of an expressed portion with that of a second portion removed after the introduction of a measured amount of water, would seem to have become entirely untrustworthy.

The Early Bacterioscopic Diagnosis of Pulmonary Tuberculosis.—C. A. BLUME (*Berl. klin. Wochenschr.*, 1905, No. 34).—In a number of cases of incipient phthisis, without sputum, the writer has been able to demonstrate the presence of tubercle bacilli by means of the following method: The patient is given a glass slide, such as is commonly used in microscopy, and for eight or ten days holds it in front of his mouth whenever he coughs. The slide is then fixed and stained, and often shows the presence of tubercle bacilli that have been coughed against it. The method would seem to be useful.

Staining the Gonococcus.—BROENNUM (*Hospitalstidende*, 1905, No. 20; *Muench. Med. Wochenschr.*, No. 30, 1905).—For routine work, in staining the gonococcus the writer recommends the use of very dilute solutions of methylen blue instead of the usual concentrated ones. The gonococci have a greater affinity for the stain than the nuclei of the leucocytes, and a better contrast is thus obtained than where both nuclei and gonococci are stained *ad maximum*. He advises the use of a 1 to 10,000 aqueous solution of methylen blue, the spread being otherwise treated in the usual manner.

A New Test for Lactic Acid.—W. CRONER and W. CRONHEIM (*Berl. klin. Wochenschr.*, 1905, No. 34).—If, in the presence of an alkali, iodine be added to lactic acid, iodoform is produced. The latter may be combined with an amin base (methylamen, anilin, etc.), to form isonitril, recognizable by its extremely disagreeable odor. The reagent is prepared as follows: to 2 g. potassium iodide, dissolved in a few (not more than five) cubic centimeters of water, add 1 g. powdered sublimed

iodine; dissolve by shaking and filter through asbestos or spun glass (not through filter-paper on account of its starch); add water to make 50 c. c. To this fluid 5 c. c. anilin are added and the resulting solution kept in a dark-glass bottle. The reagent must be shaken before being used. It keeps for several months.

To the filtered stomach contents add a little 10 per cent. potassium hydrate solution, boil, add a few cubic centimeters of the above reagent. In the presence of lactic acid, especially if the whole be boiled again, the disagreeable odor of isonitril is unmistakable. The test is very delicate, the characteristic odor appearing when the stomach contents contain 0.0025 per cent. of lactic acid. This very delicacy will probably stand in the way of its general adoption for clinical purposes. It is rarely important to know whether the stomach contents contain a trace of lactic acid. What one wants to know is whether there is present enough lactic acid to be of diagnostic significance. The rough and ready ferrie chloride test, which reacts only to considerable quantities of lactic acid, will doubtless remain the more valuable of the two.

Acetone produces the same reaction with this reagent as lactic acid. The test may therefore be of value for the detection of acetonuria, since the odor of isonitril is more readily perceptible than that of iodoform.

A Differential Staining Method for Bovine and Human Tubercle Bacilli.—CARL SPENGLER (*Deutsch. med. Wochenschr.*, 1905, No. 31).—It is quite certain that bovine and human tubercle bacilli are two distinct races. The infection of human beings with the bovine bacilli is not very uncommon, and since the two kinds of infection differ prognostically and to a certain extent therapeutically, it is of considerable importance to differentiate between the two kinds of tubercle bacilli. Spengler believes he has found a staining method that accomplishes this end. The method is as follows:

1. A very thin layer of sputum is prepared on a cover glass, with great care, the spread being dried with very gentle heat.
2. Stain with carbol-fuchsin in the cold for one to five minutes. There must be no heating of the stain and no decolorization with acids.
3. Wash with 60 per cent. alcohol until no more stain is given off.
4. Upon the spread, still covered with alcohol, place one drop of Loeffler's methylen blue. As the drop spreads out, set fire to the alcohol and let it burn for two or three seconds.
5. Wash quickly with water, dry between filter paper and very carefully over the flame.

By this method the bovine tubercle bacilli take on a bright red color, like that of arterial blood, whereas the human bacilli either do not stain at all or are of a bluish red color like that of human blood.

The method would be useful if trustworthy. It still, however, requires confirmation.

Functional Cardiac Diagnosis.—SELIG (*Prag. med. Wochenschr.*, 1905, Nos. 30 and 31).—It is important not only to make a diagnosis of the nature of a heart lesion, but also to ascertain how competent the injured heart may be to perform the work required of it. To this end, the writer has his cardiac patients climb stairs to varying heights. The healthy

heart is not perceptibly affected by any reasonable amount of stair climbing. The height to which a patient can climb without showing signs of cardiac weakness and acute dilation, is a measure of the functional capacity of his heart. We have by this method a means of expressing in figures the ability of the impaired heart to do work. Patients with poorly compensated valvular lesions and possibly dilated hearts are often able to do astonishing amounts of stair climbing without the production of increased cardiac weakness. We are therefore not always justified in translating the findings of a physical examination into terms of functional capacity.

Casts in Normal Urine.—MAX GENTZEN (*Deutsch. med. Wochenschr.*, 1905, No. 33).—The diverse results obtained by various clinicians in investigating the question as to the presence of casts in normal urine, find their solution in a research undertaken by Gentzen in Schreiber's clinic. In the normal urine of over a thousand healthy or convalescent patients, the sediment obtained by centrifugating the fresh urine contained hyalin casts in only isolated instances. In only one case was a single granular cast found, and in another, a single epithelial cast. If, however, the urine be allowed to stand until a nubecula forms, and if this cloud be withdrawn by means of a pipette and centrifugated, very different results are obtained. The normal urine of 100 healthy persons was so examined. In 49 per cent., casts were found of which 30 per cent. were granular casts, 19 per cent. hyalin ones. Of the urines of physicians and young soldiers, 70 per cent. contained casts: 43.3 per cent. granular, 36.7 per cent., hyalin.

The writer concludes that the finding of casts in the centrifugation sediment of the fresh or well-shaken urine may still be considered indicative of renal disturbance. Where, however, the nubecula or the sediment on standing is withdrawn and centrifugated, the finding of casts is without diagnostic significance, since they are usually present in health.

THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

A New Method of Treatment of Pulmonary Tuberculosis by Immunization with Bovine Tuberculin.—SPENGLER (*Deutsch. Med. Wochschr.*, 1905, p. 1228,) has shown that the power of the blood serum of tuberculous patients to agglutinate emulsions of tubercle bacilli, may be used as a criterion of the resistance which the infected individual develops against the disease. Taking this as a basis, he has found that the results of immunization with tuberculin derived from human tubercle bacilli are much less pronounced than those obtained with bovine tuberculin ("Perlsucht original tuberculin" P T O). Whereas Koch's tuberculin, even when injected intravenously, develops in the blood an agglutinating power which averages in dilutions lower than 1:75; the bovine tuberculin de-

velope an agglutinating power higher than 1:400, when used only subcutaneously. With prolonged injection of 5 mg. of P T O, agglutination in dilutions of 1:1500 may be obtained. This degree of agglutination is not transitory, but persists for at least a year. Furthermore, febrile reaction is relatively slight, and is in many cases entirely absent. It has a corresponding bactericidal effect on the tubercle bacilli, which disappear rapidly from the sputum and other discharges. The author regards bovine tuberculin as a vaccine against infections with human tubercle bacilli, of the same nature as vaccinia with relation to smallpox.

Spengler inoculated himself with living bovine tubercle bacilli with a resulting abscess and subsequent ulcer of nine months' duration, which was not accompanied by lymphatic involvement. This local infection produced in his blood-serum an agglutinating power of 1:500, and he feels justified in a tentative conclusion that such inoculation may serve as an immunization of healthy individuals against tuberculosis. For already infected individuals, however, the living bacilli produce too low an agglutinating power, and such cases require the use of the toxin in gradually increasing doses for the production of agglutination of a higher degree, which he regards as an increase in resistance.

The Action of the Salts of Quinine on Typhoid Fever.—(CURLLO and GOGGIA, (*La Clin. Med. Ital.*, 1905; *Zentr. f. d. ges. Therap.*, 1905, p. 426).—Experimental investigations demonstrate a marked inhibitory effect of quinine salts on the development, vitality and virulence of the typhoid bacillus, and it may, therefore, be concluded that, as quinine is so little toxic for the human individual, it may be regarded as our best medication against typhoid fever. Clinical tests of this assumption were made in eighteen cases of typhoid fever, in six of which quinine was administered by mouth—in three intravenously, and in nine in both ways. The intravenous injections influenced both the temperature and the toxæmia very favorably; they also increased the power of agglutination of the blood serum. Cases so treated from the onset of the disease pursued an exceptionally mild course. This series was treated during an epidemic, the general mortality of which was 16 per cent.; only one case died, and this one was received with symptoms of intestinal involvement.

For intravenous injection a 10 per cent. solution of quinine hydrochloride was used, which was later exchanged for one of 50 per cent. of the double hydrochloride, seven and one-half grains of the salt being used at a dose. No untoward effects were noted.

The Cure of Tuberculous Peritonitis by Durante's Iodine Potassium Iodide Injection.—REALE (*Gazz. degli. ospedoli*, April 9, 1905; *Zentr. f. d. ges. Therap.*, 1905, p. 427,) encouraged by the favorable results obtained by Durante's method in bone and gland tuberculosis, administered subcutaneous injections of an iodine potassium iodide solution in increasing doses in a case of tuberculous peritonitis. There was ascites reaching to the umbilicus. The fever and subjective discomfort improved after very few injections. The ascites disappeared entirely after the fortieth injection, and after the fiftieth the patient was discharged cured.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

Experimental Contributions to the Etiology of Primary Death from Burns.—H. PFEIFFER (*Virch. Arch.*, Vol. 180, p. 367).—Pfeiffer has experimented on rabbits in order to gain information on the theory lately pronounced that toxic substances are at the bottom of primary deaths from burns, excepting those resulting from shock. He found that urine and serum of rabbits became toxic for mice, rabbits and guinea-pigs rarely within the first twenty-four hours after the burning. The toxin increases in quantity with the length of time after the injury. Locally, it causes extensive necrosis and, generally, hyperirritability, followed by paralysis and death from respiratory failure. The amount of hemoglobin has no influence on the toxicity of the serum. Serum contains more toxin than urine. The toxin is destroyed by light and by higher temperatures; in a dry condition and in a vacuum over H_2SO_4 it can be preserved. It passes through porcelain filters, shows in its action no period of incubation, and is effective whether introduced subcutaneously or per os. It resembles, in many respects, the snake venom. Experiments showed that the toxin is not formed at the site of the burns. A change of the cells must precede the formation of the poison. It has nothing to do with the blood-changes occurring in the first few hours after the burn. It has no hemolytic or agglutinative qualities. The changes of the erythrocytes can be explained simply by direct effect of heat on the corpuscles within the vessels. The author has observed, in his experiments, as analogy to the appearance of an *aleus ventriculi* after a burn in human beings, the occurrence of very similar ulcerations in stomach and intestines of rabbits. The latter cannot be a direct effect of the heat, as they occur in rabbits whose ears only are burned. The general conclusions are that the death after burns in the first few hours is a consequence of shock, later an intoxication. This toxic effect is directly the cause of death during the first three or four hours; after that only indirectly by secondary organic changes caused by the toxin.

About an Embryoma of the Lower Leg.—BERNHARD FISCHER (*Muench. Med. Woch.* 1905, No. 33).—Fischer describes the case of a man fifty-seven years old that came to autopsy with a miliary tuberculosis, and who for six years had noticed a gradual enlargement of the right lower leg. The post-mortem examination revealed a large subcutaneous tumor that had encroached upon and between the musculature. The histological study of it showed a great variety of various tissue complexes imbedded in a myxomatous tissue. Large utriculi were found representing the structure of the intestine as well as mucous glands and other epithelial structures. No ectodermic constituents could be discovered, but many mesodermic formations, as cartilages, bone, etc., were present. The tumor, therefore, is undoubtedly embryoma. The situation of such

tumors in the tissues of the lower extremity has so far not been observed. As a careful investigation, especially of the testicles, did not show any reason to consider the growth metastatic, but certainly a primary new formation in the calf, its origin cannot be explained by a fetal inclusion since the extremities arise as buds and never show any clefts. A misplacement of the germinal layers in loco is excluded by the structure of the tumor (entodermic). Therefore the anlage of the tumor must have been present in the tissue when the limb arose as a protusion, that is, before the fourth week of fetal development. The conclusion which must be drawn is that its origin is to be looked for according to the blastomere theory of Marchand and Bonnet. An interesting evidence, too, is offered by the age of the patient, who, dying in the fifty-seventh year of life, not more than six years before became aware of the presence of the tumor. One cannot imagine a better proof for the capacity of embryonically misplaced tissue-complexes to remain dormant for a long time, and nevertheless afterwards exhibit, almost undiminished, all of their physiologic faculties of differentiation. The stroma in this case had in many places the character of a myxosarcoma, that destructively had invaded the surrounding muscular structures. The author rightfully asks, whether for this malignant growth a different origin ought to be assumed. His observations throw a searchlight on many views held in the teachings of pathology.

Observations on Malignant Tumors of Mice.—P. EHRLICH u. H. APOLANT (*Berl. Klin. Woch.*, 1905, No. 28).—In a great number of mice Ehrlich and Apolant succeeded in demonstrating that the tumors arose from the mammary glands. The forms that they examined belonged to the adenomata and adenocarcinomata. They could experiment with seventy-one tumors, of which ten proved to be transplantable; in some cases every transplantation was successful. The authors' calculations about the intensity of the growth of these tumors after transplantation are very interesting, and from their observations it follows that the character of malignancy lies only in the illimited capacity of multiplication. In one case, where the transplantations were successful through a long series of mice, the carcinoma was gradually transformed into a mixed tumor that after a while lost all of its carcinomatous constituents and represented itself as a spindle cell sarcoma. If sarcoma and carcinoma were transplanted together, a mixed tumor appeared (?).

Are Toxins Ferments?—L. V. LIEBERMAN (*Deutsch. Med. Woch.*, 1905, No. 33).—In a somewhat superficial way of comparing, it has become customary to almost identify the character of toxins and ferments. Lieberman has utilized the blood-agglutinating qualities of *ricin* and *abrin* to search for analogous reactions between them and those of ferments. Neither for *ricin* nor *abrin* could there be found anything to interpret the agglutination of red corpuscles as a fermentative process. As for *abrin* the toxic and agglutinative qualities are closely allied, the author is inclined to conclude in the same way on the non-fermentative character of the toxic substance, but the difficulties of experimentation do not permit of this being established directly. Bloch has announced the interesting idea, in order to explain the enormous toxicity of toxins,

that the minute quantity of toxin acts only on small, but vitally important groups of cells, or that the toxins act on substances not organized, but essentially important for certain physiologic processes. The value of his experiments lies in the exact demonstration, as far as our methods can show, that there is no analogy between the mode of action of toxins and of ferments.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

The Sudden Paralysis of the Uterine Muscle During Curettment.—CATHERINE TUSSENBROEK (*Zentralbl. f. Gyn.*, No. 34, 1905).—Kossmann in his book "Allgemeine Gynaekologie," has stated that he has met in several instances with a sudden complete relaxation of the uterine wall in the course of a curettment performed in apparently normal, not pregnant uteri. Strassmann, in reviewing the book, took exception to such "dangerous teachings," giving expression to his belief that Kossmann in every one of these instances simply had perforated the uterine wall. A lively polemic ensued (*Zentralbl. f. Gyn.*, No. 3 and 5, 1905), in which Kossmann insisted upon the reliability of his observations, while Strassmann tried to prove that physiologic and mechanic reasons preclude such a sudden paralysis. It is obvious that this question is one of unusual practical importance. If the sudden relaxation really is an impossible occurrence, then the diagnosis of a uterine perforation is established, and the necessity of an appropriate treatment of such arises, whenever in the course of a curettment the curette suddenly slips deeper into the uterus than corresponds to the length of the uterine cavity as ascertained by means of the uterine sound before the curettment began.

Tussenbroek makes the surprising statement that this relaxation is a typical occurrence in the curettment of the non-pregnant uterus. It can be observed, more or less pronounced, just after the first few shreds of the endometrium have been scraped off. If the curettment is carefully continued the uterine wall soon regains its normal tonus. The writer calls attention to the fact that Professor Van de Mey, in 1894, has described this peculiar phenomenon, and has emphasized its importance in the etiology of a perforation during curettment. If proper care is not taken the relaxed wall is easily injured. Tussenbroek's observations seem to be very exact and hardly can be doubted. She concludes her very interesting article with a polemic against the theoretical reasons which have been advanced by Strassmann in trying to disprove the possibility of a paralysis of the non-pregnant uterus.

The Pathologic Effects of Alcohol on Rabbits.—JUL. FRIEDENWALD (*Jour. Am. Med. Assn.*, September 9, 1905).—In studying the effect of alcohol upon rabbits, the author made a series of experiments on female rabbits. The result of these experiments are described as follows: There can be no question but that alcohol has a marked tendency to pro-

duce abortion in rabbits. In a series of thirty-eight pregnant rabbits, twenty died of septicemia due to abortion. The organism of rabbit septicemia was found in all cases. Of the remainder, nine had constant abortions, none of the young being born at full term. Three had their young normally, but these all died in a few hours after birth.

[It seems interesting to quote these observations, because they are identical with those made by obstetricians in chronic alcoholists. Women addicted to the use of alcohol show a very marked tendency to premature termination of pregnancy. The importance of parental alcoholism on the other hand, in the etiology of various diseases of the newborn, especially of diseases affecting the nervous system, is well known.—ED.]

Tuberculine Injections in Apparently Healthy Nursing Women.—BINSWANGER (*Beitr. zur Klinik d. Tuberc.*, IV., 1).—A primary infection with tuberculosis from the intestinal tract, is the exception; as a rule, the bacilli are carried from individual to individual, either in form of a wound infection or by being inhaled. From a theoretical point of view, newborn children should be separated from their tuberculous mothers; in practice this would mean a decided disadvantage to the child. The danger of a possible direct infection of the digestive tract by tubercle bacilli, contained in the mother's milk, is exceedingly small in comparison to the risks implied in changing to artificial food, and as far as the mothers are concerned, nursing, as a rule, does not impair their general condition.

Binswanger made his investigations in a nurseries' home in Dresden, to which only those patients of the maternity clinic are admitted, who, after a physical examination, have been found to be free of tuberculosis. Nevertheless, tuberculine injections made for diagnostic purposes in seventy-eight mothers of the home, in twenty-six cases showed a positive reaction.

The Differentiation of the Sexes.—M. HIRSCHFELD (*Monatschr. f. Harnkrankh*; rev. in *Zentralbl. f. Gyn.*, No. 33, 1905).—The writer believes that the differentiation between male and female is by far less distinct than is generally thought. He concludes his article with the following theses: (1). All differences of sex are only quantitative. (2). All the sexual characteristics pass in their development through three stages—an asexual (latent), a sexual (not yet differentiated), and a bisexual (differentiated). (3). Every bion, resulting from the conjugation of two sexes, contains besides the marked characteristics of the one sex, those of the other in more than a rudimentary form. (4). The later a sexual characteristic becomes differentiated, the more it is likely to vary from the typical. (5). Every one of the sexual characteristics may be different from the normal, but there seems to exist a correlation between such deviations of the characteristics, at least among those which develop at about the same period of life. (6). The variability of individuals, both in somatic and physical respect, is to the largest extent dependent upon the great variability in the proportion of male and female attributes combined in the individual.

Epileptic Attacks in a Case of Bilateral Ovarian Tumor.—A. W. RUSSELL (*Glasgow Med. Jour.*, February, 1905; rev. in *Zentralbl. f. Gyn.*, No. 33, 1905).—The author observed in a girl twenty-four years of age, the development of a typical epilepsy coincident with the appearance of tumors in both ovaries. He always suspected an etiologic relation between these two diseases in this patient, and feels that the tumors played an important role in the causation of the nervous trouble, because the epileptic attacks, which gradually had increased in frequency and intensity, ceased three years later quite suddenly after the removal of the ovarian tumors.

ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

The Function of the Tibialis Anticus Muscle as Regards Its Relation to the Pathogenesis of Static Mechanical Flatfoot.—RAFFAELLO GIANI (*Zeit f. Orth. Chir.*, Band XIV, Heft 1).—The writer reports a case as follows: A boy who had his leg run over by a street car sustained a crushed wound extending over the anterior outer side of the leg, thereby stretching its middle third and injuring the muscles lying beneath. The child recovered, but on beginning to use the leg, it was noticed that there was a continually increasing tendency to equinus. Two years later an examination revealed the fact that the belly of the tibialis anticus muscle had disappeared in the region of the wound. There was no reaction to the Faradic current. The author cites this case to show that damage to the muscle may lead to pure equinus. Reasoning from this conclusion, experiments were done on three hundred normal individuals of every age, the tibialis anticus muscle being stimulated by Faradic current. The results are tabulated, and show that the tibialis anticus may or may not have adducting power. The conclusion, therefore, is that this muscle, aside from its function of activity, has a passive function of maintaining the internal arch by holding up its vertex—namely, the internal cuneiform.

The Pathology of Joint Contractures.—J. v. MIKULICZ, Breslau (*Zeit f. Orth. Chir.*, Band XIII, Heft 2-3).—As the knee joint is the best joint for study, the writer confines himself to this joint, and discusses the theoretic side, leaving the more detailed report to Dr. Ludloff. By joint contraction is meant a partial or complete limitation of active and passive motion, with the exception of true ankyloses. Mikulicz, in this paper, reports on the origin of orthogenous contractures chiefly, while Ludloff reports the primary myogenous and neurogenous contractures. In the pathogenesis of arthrogenous contractures there are three factors: (1) The position of the joint is brought about by the muscles moving it. This is not reflex, but is due to equal inactivity of all the muscles. It is in a mid-position that muscles and bands are equally inactive, for pain is least in such a position. Hence the knee is placed in a partially

flexed position. (2) A change in the capsule and ligaments. On account of pathogenic thickening and contraction, their elasticity is lost, and the motion in the joint is limited. (3) Changes in the bone.

The Pathology and Therapy of Joint Contractures.—H. GOGHT, Halle (*Zeit f. Orth. Chir.*, Band XIII, Heft 2-3).—Due to the fact that flexors usually show the first pathologic change, pathologic contractures occur in flexion. The author gives a list of the flexion contractures for various joints, also a list of the best positions for functional use of the same joint. He lays down for principles of treatment the following: Immobilize the joint as long as it is inflamed or painful. Care must be used to correct inflamed contracted joints, the correction being done slowly, without narcosis and without pain. The joint should be distracted during the act of correction. The distraction thus gained must be held after correction by the proper plaster dressing. After the position of complete correction is obtained, it should be held with apparatus. The same principles of caution hold good for joints that are no longer inflamed, except that narcosis may be used. A tuberculous joint should not be mobilized, but where the stiffness is due to other cause the joint should be made as mobile as possible.

Joint Inflammations in Sucklings, and Their Etiological Relation to Later Deformities.—G. DREHMANN, Breslau (*Zeit f. Orth. Chir.*, Band XIII, Heft 2-3).—After a review of the literature and report of cases, the author concludes that these typical joint inflammations that appear in early infancy, even as early as the second week, and are signalized by swelling and contraction, present a relatively good prognosis. The etiology is little understood. The symptoms may last several weeks, and may lead to suppuration. He is of the opinion that a relationship exists between these affections and subsequent deformity, such as coxa vara and dislocation of the hips.

Limitations of Erasions in Coxalgia. Third Paper.—R. TUNSTALL TAYLOR, Baltimore (*American J'l Ortho. Surgery*, July, 1905).—In two previous papers the author outlined what he has termed "combined treatment" in coxalgia—that is, he emphasized the value of the x-ray as a means of making a diagnosis as well as the necessity of using the well-known mechanical measures for hip disease, as if no operative treatment of erosion or attempted extirpation of the disease had been attempted. He divided the cases suitable for operative treatment into three groups: (1) Beginning cases, where the focus is very small indeed, well within the bone, and not encroaching on the joint surfaces. These cases we may leave to conservative methods of rest, fixation and traction, in the hope that nature will resist further inroads of the process, as we all know that it is possible to obtain a cure in early cases. Such cases should have x-ray examinations made from time to time in order to determine extension or actual joint invasion. (2) If extension is found, then erosion must be done if acute symptoms persist. (3) If the case has extensive sinuses, which are secondarily infected, the patient's condition is bad, and the skiagram shows extensive joint destruction, nothing can be gained by erosion or incision. Our best plan is then to lay the sinuses open wide and overcome the secondary infection

as soon as possible. Experience has taught us the practical impossibility of helping these cases by extensive bone operation from the prolonged suppuration that usually follows with fever and amyloid changes. The author, therefore, only urges the operation of erosion on what might be called cases of moderate bone involvement, or those in class 2 in which acute symptoms persist. He wishes to call especial attention to the importance of carefully choosing this middle class of cases for erosion. Oftentimes surgeons, ignorant of the subsequent history, or those who do not follow up such cases, fortified by the triumphs of asepsis, lose sight of the relapses which occur when these cases are not properly treated by mechanical means. Erosion is of unquestionable value in properly selected cases, but unwarranted where improvement is seen by conservative methods. The author is convinced, after an experience of some twenty-five cases of erosion on tuberculous joints, that the so-called conservative measures give the largest percentage of success. The age of the disease is more responsible for the shortening than the age of the child when erosion is done. But the epiphyses in joints of children are no place for radical surgery. What we are after are end-results, viz.: A joint that approaches normal in mobility and function and a limb as little impaired by shortening and atrophy as possible. The author mentions three cases as types in which the temptation was great to do erosion, but the abatement in acute symptoms and the steady improvement in joint conditions contraindicated such a step.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

Hydrocephalus and Posterior Basic Meningitis.—HILDESHEIM (*Practitioner*, August-September, 1905).—This paper is an investigation into the sequelæ of non-fatal meningitis in children, and elucidates some obscure points in the etiology of hydrocephalus. The material is a large one (128 cases), and therefore the conclusions are important. The connections between these two types of disease is a very close one, not only for the light it throws on the former condition, but also because it demonstrates the fact that many cases of posterior meningitis show very few signs or symptoms, and that a very mild form of the disease is by no means rare. The author endeavors to prove the following: (1) That current views on the etiology of hydrocephalus rest on insufficient authority, and that hitherto cases beginning in the first months of life have been grouped with those present at birth; (2) that some of the undoubted cases of congenital hydrocephalus are due to meningitis; (3) hydrocephalus is so frequent a result of posterior meningitis that it might almost be considered a symptom; (4) that in older children posterior basic meningitis sometimes leaves sequelæ which are probably signs of what might be called concealed hydrocephalus—that is to say, hydrocephalus without any appreciable enlargement of the head;

(5) that in the majority of cases of hydrocephalus, enlargement of the head begins at the age when posterior basic meningitis is most common; (6) that at the onset the presence of posterior basic meningitis can be recognized in every grade of severity, in those cases in which all the classical features of the malady are present, as in those in which only one symptom is present, and that beyond these latter are certain cases which begin at the same period of life in which no symptoms are recorded at the time of onset.

Epilepsy and Eye Strain.—SPRATLING (*New York and Philadelphia Med. Jour.*, September 16, 1905).—Spratling has already published an investigation which had for its object a test of the often repeated assertion of Gould, that eye strain was an important, if not the most important, factor in the causation of epilepsy, and that for the cure of epilepsy all that was needed was the correction of very minute defects in the visual mechanism of the eye. Spratling allowed 68 cases of epilepsy at the Craig colony to be examined in the manner suggested by Gould, with the result that, after a certain lapse of time, only one of these showed any appreciable improvement in his epilepsy. In this note Spratling shows that the single favorable result was only an apparent success, as the attacks returned again with their former intensity.

The Influence of Focal Lesions in the Brain on Menstruation.—MULLER (*Neurologisches Centralblatt*, September 17, 1905).—Axenfeld made the statement that basal tumors, very likely through their influence on the hypophysis, could cause a permanent amenorrhea. The fact that an acromegaly was one of the earliest symptoms, seemed to strengthen the correctness of the observation. Five cases are described by the author in which he was able to note that a permanent amenorrhea was the earliest symptom of tumor cerebri, and that the localization of the growth was in the cerebellum or in the occipital lobe. It is of interest to know that in one of these cases a diagnosis of probable pregnancy was made at first. The explanation of this phenomenon is not known; the assumption that the hypophysis has a special function in relation to the menstrual activity cannot be supported, nor can the theory that the cerebellum exercises any sort of control over it be supported.

The possibility that the amenorrhea in these cases may be looked upon as a vasomotor symptom is worthy of further study. Before cases of this kind can be accepted as belonging to the category in which the examples here set down are included, all other causes for amenorrhea must, of course, be excluded. It is important to furnish more data upon this apparently new observation, and this symptom should be carefully watched for in all cerebral growths.

Epileptiform Attacks During the Course of Dementia Præcox.—MASOIN (*Journal of Nervous and Mental Disease*, September, 1905).—This observation was made at the colony of Gheel, in Belgium, where there were 68 case of dementia præcox among 825 patients. Of these, five were subject at times to convulsions of a clonico-tonic variety. The interest in this observation lies in the fact that the epileptic attacks in dementia præcox may bear a close relation to the other motor phenomena com-

monly seen in this disease. The impulse to movement, the incessant activity shown by these subjects, seems to arise from a real necessity, dependent upon nervous hypertension, for which these sudden and violent externalizations are the discharge.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

The Disinfection of Catheters by the Use of Formalin.—ROSENBERGER (*Therapeutic Gazette*, August 15, 1905).—The author finds from experiments on English web and soft rubber catheters of various sizes that exposure to formaldehyde in a closed vessel will sterilize these instruments in twenty-four hours or keep them sterile indefinitely after they have been boiled and placed in an air-tight container, without injury to the texture of the fabric.

The method employed was to expose the instruments to 5 c.c. of formalin upon absorbent cotton which was placed in the end of an air-tight metal tube containing the infected and sterilized catheters. Formalin was found to give better results than paraform, the former generating formaldehyde more readily and without application of heat.

Exstrophy of the Bladder Successfully Treated by Peters' Method.—SHERMAN (*Jour. A. M. A.*, September 23, 1905).—In Peters' operation the ureters are dissected out individually, keeping a small circular patch of bladder wall around the vesical orifice of each. The rest of the bladder wall is ablated. Each ureter, with its button of bladder wall, is then drawn through a small slit in the rectal wall of its own side and left hanging from 1 cm. to 1.5 cm. into the rectal lumen.

The idea on which the operation of Maydl was based, namely, that there was a sphincteric action in the muscular layer of the bladder wall around the openings of the ureters, and that this required the conservation not only of this muscular fibre which surrounded each ureteral orifice, but also of those that surrounded both of them together, has to be abandoned; and with it may be given over the necessity for transplanting the whole of the trigone of the bladder into the colon or rectum, and making it practically a part of their wall. It is only necessary, therefore, to conserve such part of the bladder wall as surrounds each ureteral opening individually, and even this not with the idea that it contributes a sphincteric control of the opening, but merely with the idea that the wound of the mucous membrane is made at a reasonable distance from the mouth of the ureter and that the ureteral mucosa itself is left absolutely intact.

In the earlier operations which Peters himself did, he passed into each ureter a small catheter and fastened it there. Its presence in this ureter served as a guide which prevented the wounding of the ureter during the operation and afterward served as a means to conduct the urine out of

the rectum during the first thirty-six to forty-eight hours following the operation. In one of Peters' patients an ascending infection occurred and the patient died, and Peters thought that the infection possibly was due to the fact that he had left the catheter in the ureter after the transplantation of the ureter into the rectum.

The author departed from Peters' technic in that he left the catheters in the ureters only until they were transplanted into the rectum. In the operation, as Peters' has described it, dilatation of the sphincter ani was practised so as to permit free exit for the urine. From fear of anal incontinence the author omitted this step, but fastened a little rubber tube in the anus. In the author's case the rectum acted perfectly well as a bladder from the beginning, and would retain urine from one to two hours. Later the period was increased to three to four hours. There has been no ascending renal infection. Peters' first operation was done in 1901, and the patient has now lived four years with his rectum doing duty as his bladder.

The Syringe versus the Irrigator in Gonorrhea.—VALENTINE (*Amer. Jour. Urol.*, July and August, 1905).—The past two years have been productive of several articles more or less denunciatory of irrigations in gonorrhea. The author endeavors to answer these and states his position as follows:

1. Even the mildest manifestations of gonorrhea, spells a dangerous disease to the patient, his wife, his children and the community.

2. No honest conscientious advocate of the irrigation treatment of gonorrhea ever claimed that a patient was cured, before all the tests which present science demands (briefly sketched under paragraph 19 of this paper) have shown the permanent absence of gonococci.

3. No honest advocates of the irrigation treatment ever made the preposterous, unscientific assertions quoted as coming from them.

4. All advocates of the irrigation treatment insist and repeat and incessantly reiterate that the irrigation treatment, like any other treatment, is positively dangerous, unless employed with caution, tact and gentleness.

5. The immense numbers of gonorrheas successfully treated by irrigations, owe their recovery to the operators' gentleness and judgment.

6. Unbiased exhaustive trials, carefully conducted on a large scale, with each new drug advocated for the cure of gonorrhea, have invariably caused us to return to the irrigation treatment.

7. The technique of irrigations is not so difficult to acquire, but their successful employment requires the same scrupulous attention to details that is demanded by every other remedial measure in any other disease.

8. The choice of drugs used in irrigating solutions is not limited to potassium permanganate, silver nitrate or mercuric bichloride, but is governed by the needs of each case.

9. The guides for the selection of drugs and the strength of the solutions employed are, the condition of the discharge, the microscopic and cultural results, the character of the urine, and such involvements of the major and minor adnexa as may exist.

10. Chronic gonorrhea is always dependent upon infiltration of the urethral mucosa, involvement of the urethral crypts, glands and follicles

or invasion of Cowper's glands, the prostate or seminal vesicles or all of these; therefore treatment of these extensions of the disease is necessary in conjunction with irrigations.

11. When a patient with acute anterior gonorrhea comes under treatment before the adnexa are involved, he will escape complication, if irrigations are cautiously, skillfully, gently and judiciously employed.

12. No other form of treatment will relieve pain and reduce discharge as quickly as do properly administered irrigations.

13. Those who desire to have ocular demonstration of the effects of carefully administered irrigations, are invited to observe as many cases as they wish, from the beginning of the treatment to its end.

14. Such observations will show them that by irrigations, pain is promptly arrested, discharge reduced, the course of the disease abbreviated and complications and sequelæ avoided.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

Resection of the Inferior Turbinate.—FORSELLES (*Monatsschrift fuer Ohrenheilkunde*, etc., June, 1905), believes the galvano-cautery method is giving way to *resection* in removal of the inferior turbinate. He quotes Klemperer (1899) who considered it unnecessary to discuss at that time any other methods than the cold snare and galvano-cautery.

Östman, however, in the same year proposed a combined method, breaking the continuity with the galvano-cautery, and then using the cold snare to remove the hypertrophied part.

Baurowicz mentions a similar method, removing, after the galvano-cautery severance, the hypertrophic tissue by either the cold snare or with the Beckmann scissors.

Fein has constructed for the removal of these hypertrophies a rhomboid double scissors which cut through front and back simultaneously.

Forselles, after describing the combined methods of Kuttner, Wroblewski, Von Flatau and others, thinks due consideration was not given the forceps for this operation; the forceps in general use are too weak and unsuited for the bony operation. Voss' instrument is an example. The author has at last invented a forceps which meets the requirements and furnishes a cut of same; its length is 18 c. m. with direct shanks 5½ c. m. from the *lock*. The points of the blades are slightly grooved in order to engage the posterior hypertrophy. The shanks are made stronger so as to admit of elastic motion. After cocaineization with a 10 per cent. solution the patient is put on the operating table, and the turbinate engaged with the forceps so that the lower blade is under in the inferior meatus and the upper blade above in the middle meatus. Since one generally removes a larger piece of the posterior part the forceps points are directed somewhat outward. The turbinate is seized

strongly, as much laterally as possible, and with a turn from left to right, removed with one pinch.

The operation is accomplished in a second without any considerable pain. By the rotary motion, which is important, a clear removal is accomplished and bleeding controlled. The horizontal position is desirable for this maneuver—rotary motion, and cases of fainting do not occur. During the crushing the hemorrhage is minimal and one need fear no suffocation from the detached part falling, since it is held by the forceps. Adrenalin is not needed in this operation. Forselles has operated (1900-'04) on 210 cases by this method and the operation grows in favor with him.

Indications for Opening the Mastoid Process in Cases of Acute Empyema of the Cells Where there is an Absence of Signs Over the External Surface of the Mastoid.—SHAMBAUGH (*Ill. Med. Journ.*, July, 1905). In the first place such cases rarely, if ever, develop in early life, or in children, for here the outer shell of the process is quite porous, and readily permits of the extension of the inflammatory process going on within the pneumatic spaces to the periosteum covering the process.

Whenever in the course of an acute purulent otitis media there occurs a sagging down of the membrane lining the inner end of the upper posterior wall of the external meatus, especially when associated with a rise of temperature, positive evidence exists of a mastoid abscess, even though there is a complete absence of any signs over the external surface of the process. The only condition that might be confused with the above sign is the existence of a furuncle at this point.

Whenever in the course of an acute otitis media a tender, sometimes fluctuating swelling occurs in the soft tissues of the neck below the tip of the mastoid, even though no signs are present over the mastoid, the presence of an abscess in the large cells at the tip of the mastoid is probable—Bezold type.

Again where the discharge continues four or five weeks, in spite of rational treatment, and the membrana tympani, in spite of the free escape of pus, appears injected, and the upper posterior quadrant bulging, it is wise to consider the question of opening the mastoid to obtain better drainage, and to preserve the function of hearing. In the discussion Ballenger mentioned the likelihood of bony involvement if the perforation be marginal, and gave as another indication for operation, facial paralysis.

A So-Called Bony Cyst of the Middle Turbinate of Excessive Size.—SCHATZ (*Monatsschrift fuer Ohrenheilkunde*, etc., June 1905).—About the middle of February, 1903, Schatz saw a woman, age forty years, who, fourteen days before, became sick with what appeared to be influenza. She had headache, backache, joint pains, a slight cough and some fever. While these symptoms improved in a few days, a constant boring and twinging was experienced over the left eye, and a considerable swelling of the left nasal bridge and left supraorbital region supervened. The pains became so intense that the patient had not slept or eaten for a week. The pain became intolerable; the previously sensible patient.

cried out in an alarming manner. This woman had never suffered from catarrh nor a purulent discharge, nor did she at this time.

The left nasal cavity was occupied in a large part by a globular tumor. The septum was pushed considerably to the right. The mucous membrane of the anterior part of the tumor was edematous. Probing brought out the fact that the swelling had a bony origin. Crepitation could not be elicited on pressure, nor was any pus visible. Schatz opened the forepart with hammer and chisel, and at once pus exuded. Hanging from the roof of the bony cyst two bean-sized polypi were seen. He removed by the snare and bone forceps the whole swelling, or, better, shell, which was so attached that the middle of the wall was grown to the septum. The operation was followed by complete relief from pain subjectively, and percussion of the supraorbital region no longer elicited severe paroxysms of pain. Schatz, on the statement of the woman that for a year she had not been able to breathe well through the left nostril, concluded that the case was one of an ethmoid cell having projected deep into the middle turbinate, which became inflamed and through closure a cyst formed, the influenza acting as the exciting cause.

Ocular Symptoms of Affections of the Accessory Sinuses of the Nose.—POSEY (*Journal of American Med. Ass'n.*, September 9, 1905).—Calls attention to the aid an oculist may sometimes give in discovering or suspecting sinus affections. An important point to be remembered is that very pronounced disease of any, or, indeed, of all the sinuses, may occur without occasioning any subjective nasal symptoms, and, secondly, that repeated rhinologic examinations may fail to discover pus in the nares in sinusitis, the affection of the cavity being only detected by catheterization and irrigation.

The early symptoms of many diseases of the accessory sinuses are ocular. (1) Disturbances in vision and the visual field. The involvement of the optic nerve as a consequence of ethmoidal or sphenoidal sinusitis may vary in degree from a simple edema to an active retrobulbar inflammation. (2) Changes in the orbit. A chronic distention of the walls of a sinus (hydrops) may occasion a dislocation of the globe. In affections of the sphenoidal sinus involvement of the ocular muscles is not uncommon. Ethmoidal disease chiefly manifests itself in the intraocular and conjunctival circulatory disturbances, and in the production of asthenopia by interference with the extraocular muscles. (3) Affections of the lachrymal apparatus, especially pre-lachrymal abscesses. (4) Affections of the lids, especially edema of the upper lid on the nasal side. (5) Affections of the extraocular muscles. Paresis and even paralysis of one or more of the eye muscles may occur as a consequence of sphenoidal sinusitis.

Posey also considers affections of the conjunctiva, of the cornea, of the uveal tract, pupillary changes, cataracts, errors of refraction, asthenopia, headache and neuralgia, referable to sinus disease.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

MARTIN F. ENGMAN, M. D.

The Age-Incidence of Herpes Zoster.—WILLMOTT EVANS (*The British Journal of Dermatology*, June, 1905).—There is quite a difference of opinion as to the age at which herpes zoster is most frequently met, and this diversity is not to be explained by any misunderstanding as to the disease to which the name herpes zoster is to be applied. The author found that half of all his cases were under fourteen years of age, this result agreeing almost exactly with Radcliffe-Crocker's statistics, who found that half of his cases were under thirteen years of age. Further, the author found that over the age of forty there were many cases, amounting to about one-sixth of the whole number. This, too, agreed with Radcliffe-Crocker, who stated that after deducting the cases occurring under the age of twenty, the majority were over forty. Thus, according to the author's statistics there are two periods of life when herpes zoster is especially likely to occur; first, in patients under fourteen years of age, and, secondly, later in life, say after the fortieth year. As to a possible explanation of the very marked divergence of the opinions expressed, the author considers it a fairly safe rule that, when in any disease there are two distinct periods of incidence, there are two distinct etiological factors, or two separate diseases have been confused. It is important to bear in mind that different sets of statistics frequently refer to different localities or different classes of the community. In favor of this view is the relative frequency of occurrence of herpes zoster. In the statistics of the American Dermatological Association the frequency of herpes zoster is given as 1.15 per cent. Radcliffe-Crocker found in 10,000 out-patients that herpes zoster amounted to .61 per cent., while among his private patients the frequency was only .36 per cent. These great variations show that locality is probably responsible for some of the differences. Herpes zoster does not occur equally in all parts of the country nor in all ranks of society. In epidemics the disease is almost confined to children, and thus in places where the disease is especially liable to occur in epidemics the proportion of cases in children will be unduly exalted. Another important factor is, in the author's opinion, the multiple origin of the disease. There is much reason for thinking that a large majority of the cases of herpes zoster are really of microbic origin; the chief arguments in favor of this view are the occurrence of epidemics and the seasonal prevalence of the disease. This microbic variety may be looked upon as the essential form of the disease, simulated by cases of other etiology. These other cases may be produced by such widely separated causes as arsenic, trauma and tuberculous meningitis. With so varied an etiology, it is inevitable that great discrepancies must occur in different series of statistics. The question then arises, can we assign different causes to different groups of herpes zoster which some statistics have shown to exist? The author is inclined to attribute most cases of the disease oc-

currence in children to the microbic form, while those cases occurring after forty will naturally fall in another etiological group, though the exact cause cannot yet be determined.

The symptomatology presents a very strong argument in favor of this broad division of herpes zoster. In children the disease is very rarely painful, and any pain that has been present disappears promptly with the eruption. With those more advanced in years the case is otherwise. Not only may the eruption be preceded and accompanied by severe neuralgic pain, but long after the vesicles have scabbed and healed, the pain may persist with agonizing intensity. The severity of the pain and the extent of the lesion bear no sort of relation to one another, the greatest pain often being experienced when the skin lesion is but slightly marked. This difference in the severity of the pain, the author thinks, points to an etiological difference. In no work on the subject has the author been able to find a reference to the preponderance of women in the cases of herpes zoster occurring after forty. Of his own cases, more than 75 per cent. were women. In various text-books reference is made to the relative frequency with which the two sexes are affected, but these statistics refer to the diseases of all ages, being valueless for comparison with the author's experience with patients of over forty years.

The Influence of Potassium Iodide on the Resistance of the Blood Fluids to Staphylococcus Albus.—G. T. WESTERN (*The British Journal of Dermatology*, August, 1905).—The author thinks the frequent appearance of a pustular eruption in iodism may possibly be explained either by some influence of this drug over the serum, such as a limitation of its power to produce those bodies which prepare the bacteria for phagocytosis, or a power of combining with or neutralizing those bodies when formed. He offers in support of this idea the fact, recently demonstrated, that "opsonins," like "complements," may be neutralized or bound by various salt solutions (CaCl_2 , BaCl_2 , SrCl_2 , MgCl_2 , K_2SO_4 , NaHCO_3 , $\text{Na}_3\text{C}_6\text{H}_5\text{O}_7$, $\text{Na}_2\text{C}_2\text{O}_4$, $\text{K}_4\text{Fe}(\text{CN})_6$, and other substances, e. g., formalin), so that they cannot act upon bacteria. He divides into two main groups the experiments which he has carried out in order to ascertain whether this idea can be supported by laboratory investigation: (a) Those carried out with the blood of patients before and during a period in which they were placed under the influence of potassium iodide; (b) those carried out by adding *in vitro* to the serum of a normal man isotonic solutions of this salt. The conclusions which he draws from the observation of a series of cases and experiments are as follows: (1) The administration of potassium iodide has no influence on the opsonic index of the serum; (2) an iodide eruption is not necessarily associated with a low opsonic index; (3) the addition of potassium iodide to serum, *in vitro*, does not interfere with its opsonic power.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

The Significance of the Eye Symptoms in Disseminated Sclerosis of the Brain and Spinal Cord.—W. UHTHOFF (*Ophthalmoscope*, September, 1905).—This paper is a *resume* of personal results from an examination of 150 cases.

Changes in the Optic Nerve and Optic Conducting Apparatus.—In one-half of all cases the ophthalmoscope shows atrophic alterations as follows: (1) Atrophic discoloration of the whole papilla (comparatively rare, only three to four per cent. of the total number of cases). (2) Incomplete atrophic pallor of the whole papilla, so that the inner parts of the papilla still retain a slight reddish tint; (3) A partial, limited atrophic discoloration of the temporal half of the papilla. The second and third groups constitute about twenty per cent. of all cases. Low grade neuritis is present in five per cent. of all cases. The writer has never encountered a frank neuritis with prominent nerve head. In five per cent. there were disturbances of vision without ophthalmoscopic alterations. The visual disturbances are manifold, but for the most part resemble the appearances in retrobulbar neuritis.

Alterations in the Visual Field are of several forms: (1) Central scotoma (often relative) with an unrestricted peripheral field; (2) central scotoma with peripheral contraction (rare); (3) peripheral irregular contraction (frequent); (4) regular concentric peripheral contraction; (5) ring scotoma (very rare); (6) an initial central scotoma, eventually clearing up entirely, and succeeded by a permanent peripheral contraction. Hemianopsia occurs very seldom, the anomalies of the field usually corresponding to the picture of the peripheral affections of the optic nerve trunk.

In half the cases the visual disturbance sets in quickly. Secondary improvement in visual acuity after primary failure, is observed in fifty per cent. Permanent, complete bilateral amaurosis is extremely rare. Transitory unilateral blindness, usually dependent on optic neuritis, is not infrequent. Peripheral color defects, when present, are usually partial, and are apt to be overlooked unless especially sought for.

Vision is often temporarily impaired as the result of excessive bodily strain or fatigue.

The optic nerve may undergo a simple atrophic process of the type observed in progressive tabetic atrophy, or the final stages of an initial interstitial inflammation may simulate the picture of a simple atrophy. A point of importance in differential diagnosis is the retention, in multiple sclerosis, of the axis cylinder. The vascular changes consist in an increase and widening of the finer vessels, alterations in the walls, and proliferation of the surrounding tissues.

Eye Muscles.—Partial paralysis is encountered in a large number of cases; paralysis in twenty per cent. The former is slight, incomplete and transitory. The abducens is most frequently involved, the oculomotor more rarely. Lateral associated movements are more frequently

paralyzed than the up and down. Paralytic convergent and divergent squints are observed. The vast majority of paralyses are of cerebral origin.

Nystagmus and Nystagmic Twitchings.—Nystagmus, which occurs in 12 per cent., is important in diagnosis, as it is rare in other nervous affections. Nystagmic-like twitchings occur in 46 per cent.—16 per cent. lateral and 30 per cent. in all directions. It is of lesser diagnostic importance than nystagmus proper, because occurring in other nervous diseases and in healthy people.

Pupils.—Miosis with slight light reaction in five per cent.; a difference in size of pupils in four per cent. Neither abnormally sharp reaction to light, nor hippus, has any significance.

Recurrent Iritis—A Study of Nine Cases.—H. WOODS (*Ophthalm. Record*, July, 1905).—The general truths underlying the recurrence of iritis seem to be that a constitutional dyscrasia (as rheumatism or gonorrhoea) is always present; that the exciting cause of a relapse is one or another of numerous irritants that can produce hyperemia, as eyestrain from effort to use an eye incapable of work from former disease or refractive error, pulling an old synechia by pupillary action, exposure to wind, dust, etc.

Prophylaxis is to discover and, if possible, prevent these exciting causes.

A Case of Tubercle of the Choroid Presenting Certain Clinical and Pathological Peculiarities.—G. CARPENTER and S. STEPHENSON (*Ophthalmoscope*, August, 1905).—A little girl, three years of age, presented the following clinical picture: Enlarged spleen, bronchi and rales in the chest, general cyanosis, irregular temperature (97.6 F. to 103 F.), respirations varying from 32 to 76, without physical signs adequate to account for these fluctuations.

On ophthalmoscopic examination, the retinal veins were found enlarged and tortuous, the arteries small, the disks hazy. Situated in the central region of each fundus were about a dozen oval or round fawn-colored tubercles, stippled with retinal pigment, and varying in size from one-fourth to one disk diameter. The macula itself appeared healthy.

Post mortem confirmed the diagnosis of acute miliary tuberculosis, the disease affecting especially the lungs, spleen and choroid.

In addition to the usual appearances of tubercle of the choroid, the eye specimens showed two pathological curiosities: (1) Distinct from the tuberculous foci there was a general infiltration of the choroid with small round cells, which the authors ascribe to a general tubercular choroiditis, and (2) a few nodules of retinal tuberculosis (in one of which tubercle bacilli were found), entirely independent of the choroidal deposits.

The case emphasizes the well-known fact that the most trustworthy sign of acute miliary tuberculosis is furnished by the discovery of tubercle in the choroid. According to the writers, the eye is involved in 50 per cent. of all cases of acute miliary tuberculosis.

BOOK REVIEWS.

THE TREATMENT OF FRACTURES, WITH NOTES UPON A FEW COMMON DISLOCATIONS. By CHARLES L. SCUDDER, M. D. Fifth edition thoroughly revised. W. B. Saunders & Co. Philadelphia and London.

This book is exactly similar in binding, etc., to the other four editions that have appeared and are so well-known to practitioners throughout the country. Many new x-ray plates are added which show the actual line of fracture. Many half-tones have also been added which increase the value of the illustration. The text has been thoroughly gone over, the author calling attention to the fact that fractures of the neck of the femur are receiving different treatment, a change which may prove to be a very radical one. Also the notes on fracture of the carpal bone are somewhat changed and enlarged.

ACUTE CONTAGIOUS DISEASES. By WILLIAM M. WELCH, M. D., and JAY F. SCHAMBERG, A. B., M. D. Lea Brothers & Company. New York City. 1905.

The writers have endeavored in this work to present a practical treatise for the guidance of students and practitioners of medicine. It is a book of seven hundred-odd pages, with 109 engravings and 61 full-page plates. It includes discussion in the most thorough and admirable manner of the following subjects: "Vaccinia," the "Relation of Cow-pox or Vaccinia to Small Pox," "Small Pox," "Complications and Sequelæ of Small Pox," "Chicken Pox," "Scarlet Fever," "Diagnosis of Scarlet Fever," "Measles," "Rubella," "Typhus Fever," "Diphtheria," "The Treatment of Diphtheria," "The Serum Treatment of Diphtheria," "Disinfection." The authors of this book compose a happy combination, one of them being a practitioner of many years experience in infectious diseases, the other an accomplished dermatologist; thus the various phases of the eruptive symptoms of these diseases have been most carefully studied, together with the intercurrent eruptions which frequently complicate and confuse these conditions. Dr. Schamberg's excellent work upon the septicemic rashes complicating small-pox is an extremely valuable addition to the volume. The illustrations are excellent. The reviewer is especially pleased at the clearness with which the differential diagnosis is portrayed, and he therefore considers this volume of exceptional merit and value.

THE PHARMACOPŒIA OF THE UNITED STATES OF AMERICA. Eighth Decennial Revision. P. Blakiston's Sons & Company. Philadelphia. 1905.

The recent revision of the U. S. Pharmacopœia is characterized by several important changes. There are 117 additions and 155 articles dismissed. Of the additions are especially to be noted the great number of synthetic products, a number of active principles of drugs hitherto represented only in the crude form, and certain new salts of drugs which are more soluble, or have greater stability than those formerly in use. Most striking is the admission of *serum antidiaphthericum*, for which an American standard has been fixed. Following the "International Conference for the Unification of the Formulas of Heroic Medicine," the present revision adopts a 10 per cent. or 20 per cent. strength for all tinctures, so that for instance the tincture of aconite is reduced from 35 per cent. to 10 per cent., the tincture of cantharides is increased from 5 to 10 per cent. This represents a step towards a much-to-be desired uniformity of standards throughout the world.

The changes in terminology are in part very admirable. All those synthetic compounds of definite chemical formula have been named, if not by the exact chemical expression, by terms approximating these, dispensing with the often fantastic and misleading trade names. Thus "phenacetin" has been admitted as *acetphenetidin*, "urotopin" as *hexamethylamin*. In the case of "carbolic acid" the chemical term *phenol* has been made the official designation. The liberty taken with Latin diction in converting

"extracta fluida" into "fluidextracta," while perhaps less confusing from the standpoint of the indexer, is scarcely a philologically commendable precedent.

Finally, a large number of assay processes for drugs of vegetable origin, has been incorporated in the present revision of the pharmacopœia. This will insure a greater uniformity in purity, strength and therapeutic action of the drugs so protected.

INTERNATIONAL CLINICS. J. B. Lippincott Company. Philadelphia and London. Fourteenth Series, Vol. IV, 1905. Fifteenth Series, Vol. I, 1905. Fifteenth Series, Vol. II, 1905.

These volumes of International Clinic fully uphold the good repute in which the publication is already held. Of the articles of special note in vol. iv (fourteenth series) may be mentioned Joval, on the "Indications for the Dechloridation Treatment;" Dyer Duckworth, on the "Incidence of Gout in the United States of America and in New Communities;" Gallant, on the "Symptomatology and Diagnosis of Glenard's Disease;" Craig, on the "Etiology and Pathology of Amœbic Infection of the Intestines and Liver."

Vol. i (fifteenth series) contains articles by Walsh on the "Eye and Hand in the Diagnosis of Heart Disease;" Parkinson, on the "Early Diagnosis of Heart Disease in Children;" Benedict, on "Intestinal Adhesions;" Bramwell, on "Two Cases of Ocular Palsy."

Vol. ii (fifteenth series) the following articles are worthy of particular attention: Morse, the "Treatment of Acute Nephritis in Children;" Edes, "Suggestions Regarding the Treatment of Neuraesthesia;" Willson, "The Diagnosis of Incipient Thoracic Tuberculosis;" Corner, "The Pathology and Treatment of the Hernia of Children," etc.; Terrier, "The use of Scopolamin as a General Anæsthetic in Surgery;" Wiesel, the "Anatomy, Physiology and Pathology of the Chromaffin System, with Special Reference to Addison's Disease and Status Lymphaticus."

MANUAL OF GYNECOLOGY. By D. BERRY HART, M. D., F. R. C. P. E., F. R. S. E., Lecturer on Midwifery and Gynecology, Edinburgh, and A. H. FREELAND BARBOUR, M. D., F. R. C. P. E., F. R. S. E., Lecturer on Midwifery and Gynecology, Edinburgh. With 12 lithographs and 359 woodcuts. Sixth edition. Chicago: W. T. Keener & Co. 1905. Price, \$5.00 net.

It is probably sufficient to announce here that this well-known book has appeared in its sixth edition. Although the views of the writers in general coincide with those given by most of the American authors in their text-books, this volume, possibly on account of the concise presentation of the subject, has become quite popular with the American student. For the specialists the large number of references appended to each chapter will prove of interest and value.

DIETETICS FOR NURSES. By JULIUS FRIEDENWALD, M. D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore; and JOHN RUHRAH, M. D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. 12mo volume of 363 pages. Philadelphia and London: W. B. Saunders & Co. 1905. Cloth, \$1.50 net.

"Dietetics for Nurses" has been written on the same practical lines as the larger work on Diet by the same authors. It has been prepared both to meet the needs of the training school and to serve as a ready reference book for the nurse when on a case. The essentials of dietetics are given in a concise, clear manner and the physiology of digestion with the various classes of foods and the part they play in nutrition have been carefully reviewed. This is an excellent little work indispensable to the well-trained nurse.

INTERSTATE MEDICAL JOURNAL.

VOL. XII.

NOVEMBER, 1905.

NO. 11.

ORIGINAL ARTICLES.

BLOOD VESSELS OF THE LYMPHATIC GLAND.

BY W. J. CALVERT, M. D., Columbia, Missouri.

ASSISTANT PROFESSOR OF INTERNAL MEDICINE, UNIVERSITY OF MISSOURI, COLUMBIA.

In 1897¹ I described the distribution of the blood-vessels in the lymphatic gland of the dog; in 1901² the blood-vessels in the lymphatic glands of the human and monkey; and recently have been able to trace the circulation in the lymphatic glands of the horse and cow. In each the arrangement of the blood supply is the same.

In the dog, artificial injections were used. In the human, monkey, horse and cow, congestion due to plague served the purpose of artificial injections. The glands were fixed in Zenker's fluid, hardened in alcohol and stained with hæmatoxylin and eosin.

One or more arteries enter the gland at its hilus, pursue an independent course through the hilus stroma to the medullary substance. Here the arteries, arteriæ lympho-glandulæ, rapidly diminish in size by giving rise to numerous smaller arteries which enter the trabeculæ through which they are distributed to all portions of the gland, giving in their course, branches to the cords and follicles. Some of the arteria lympho-glandulæ follow a trabecula to the capsule of the gland where it branches. The smaller vessels run on the capsule to supply the capsule and the overlying areolar tissue. These vessels may anastomose with arteries which arise from the hilus to run around the gland.

Arteries to Cords.—Arteries for the cords, medullary arteries, leave the arteriæ lympho-glandulæ to enter smaller subdivisions of the trabeculæ in which they run to the cords. The arteries either pass to the center of the cord or immediately below the periphery of the cord give rise to a plexus of capillaries. When the artery passes to the center of a cord it runs parallel to the axis of the cord, giving rise throughout its course to arterial capillaries, which go to the periphery of the cord to form a rich plexus of capillaries lying just under the surface of the cord. The capillaries of this plexus unite to form veins, medullary veins, which soon unite with similar veins. These collecting veins enter the trabeculæ to join the venæ lympho-glandulæ; or they enter the center of the cord to return with the artery. These veins freely anastomose with veins from

surrounding cords to form a rich venous plexus. When the artery gives rise to the capillary plexus, immediately on entering the cord the arrangement and disposition of capillaries are as above described.

Arteries to Follicles —At the junction of the medullary with the cortical portions of the gland, the arteriæ lympho-glandulæ give off large arteries which run in an arched direction—parallel to the capsule—just

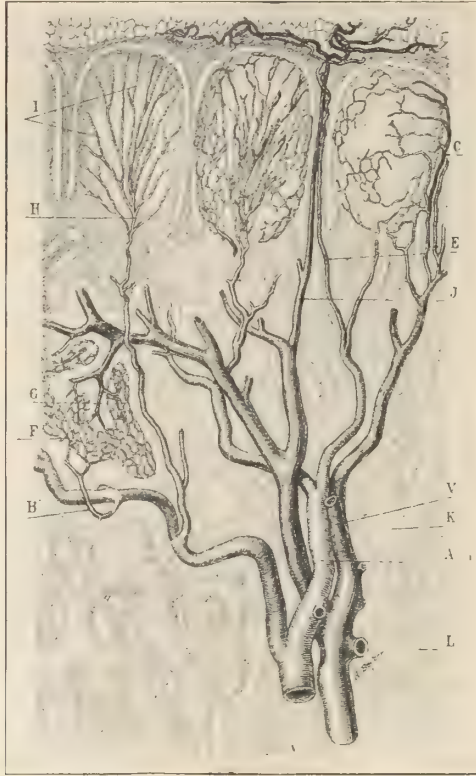


Fig. I.—Composite section of three follicles and the medullary cords of the mesenteric lymphatic gland of the dog. A, artery. B, artery to cord. C, follicular vein. E, artery to capsule. F, capillaries in periphery of cord. G, vein of cord. H, follicular artery. I, arterial capillaries in follicle. J, vein from capsule. L, trabecula. V, vein.

under the proximal ends of the follicles. From these arteries, branches are distributed to the cords and follicles. Arteries for the follicles pass to the centers of cords some distance below the proximal ends of the follicles to run parallel to the axis of the follicles. These arteries, arteriæ folliculi, penetrate the proximal ends of the follicles a distance equal to from one-fifth to one-third the entire length of the follicle, to divide into

a number of long, small, straight capillaries, which radiate in all directions toward the periphery of the follicle. Just beneath the surface of the follicle these capillaries turn or branch, run parallel to the surface of the follicle to form a capillary plexus. The capillaries of this plexus

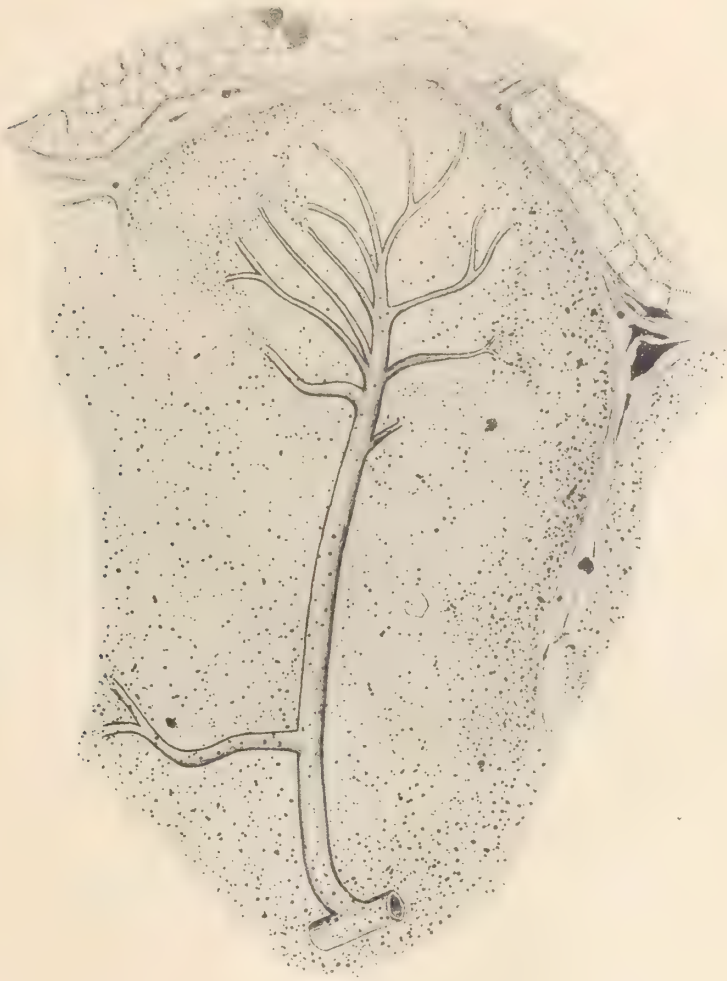


Fig. II.—Shows origin, course and distribution of a long follicular artery. At origin, 34 microns; before dividing, 31 microns; capillaries in follicle from 7 to 8 microns in diameter. Human.

unite to form veins, *venæ folliculi*, which run near the surface toward the proximal end of the follicle, where they unite with similar veins from neighboring follicles to form the larger veins, *venæ lympho-glandulæ*, which run in the *trabeculæ* to the hilus of the gland.

The following variations in the course of arteriae folliculi have been observed:

1. From the capsule passing through the lymph-sinus, surrounded by more or less connective tissues to the center of the follicle.
2. From a neighboring trabecula.
3. Two or more arteries may enter the proximal end or one side of the follicle. Diverging to break up into capillaries. Or one artery

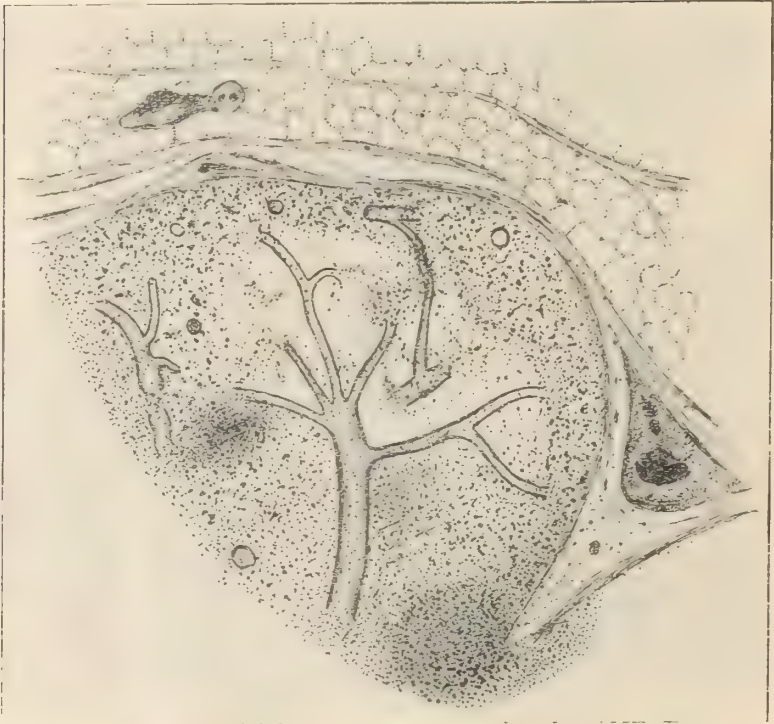


Fig. III.—A follicular artery. One of the long capillaries is seen to join a venous capillary in the periphery of the follicle; on either side of the follicle small veins are seen. Artery before dividing is 41 microns; capillaries from 8 to 10 microns in diameter. Human.

may enter the proximal end, the second, the side of the follicle. In either event, each artery is smaller than the single follicular artery.

Veins springing from the follicular capillary plexus may pursue one of the following courses:

(a-) The follicular vein may continue in a straight course some distance below the proximal end of the follicle to unite there with a larger vein or turn at a right angle and runs parallel to the surface of the gland.

(*b*) The follicular veins from the adjacent sides of two follicles may unite near the proximal ends of the follicles or at a lower level to run as described in *a*.

(*c*) The follicular veins may turn at a right angle to run under the proximal ends of the follicles.

(*d*) The follicular vein from opposite sides of a follicle may unite near the proximal end of the follicle and there join a larger vein (running

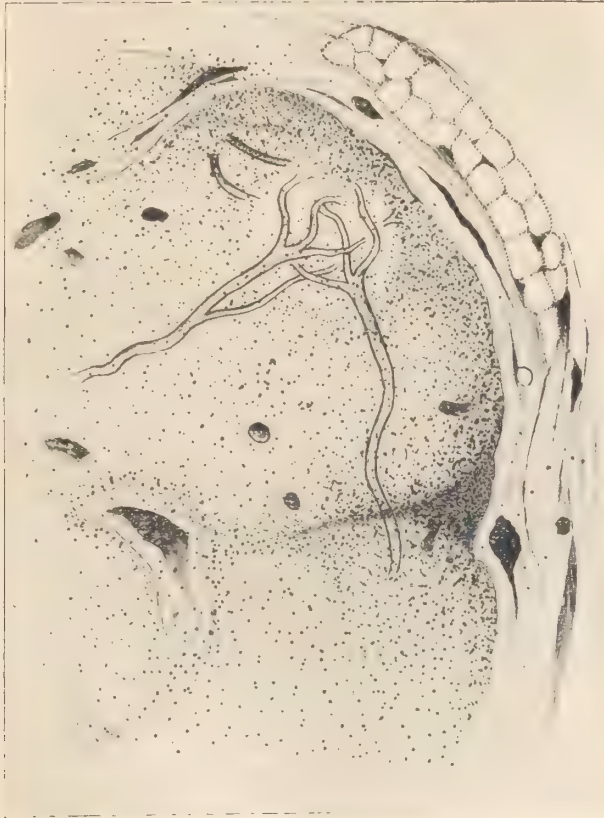


Fig. IV.—Double arterial supply to a follicle. Human.

under the proximal ends of the follicles) or the vein may continue as in *a*.

(*e*) The follicular vein may leave the follicle at a higher level, pass through the interfollicular septum and join the veins of a neighboring follicle.

The follicular and medullary veins unite with one another to form the *venae lympho-glandulae* or larger veins of the lymphatic gland. When a follicular vein pursues the course described in *a* it may turn at a right

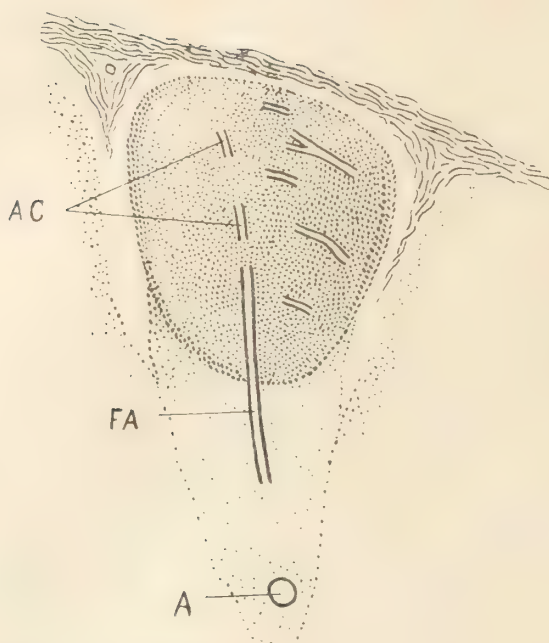


Fig. V.—Lymphatic gland of cow. A, large artery from arteria lympho-glandula. F A, follicular artery. A C, capillaries.

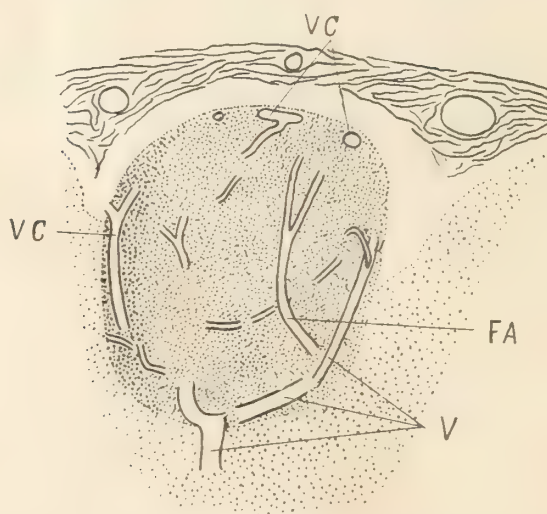


Fig. VI.—Lymphatic gland of horse. F A, follicular artery. V, follicular vein. V C, venous capillaries. Arterial capillaries are seen in the follicle.

angle to run parallel to the surface of the gland receiving in its course follicular veins from above and medullary veins from below, or it may unite with similar veins to form an arborescence; or it may turn at a right angle to run under the proximal ends of the follicle parallel to the surface of the gland receiving the follicular and medullary veins. The *venae lympho-glandulae* run in the trabeculae and receive throughout



Fig. VII.—Three follicles of lymphatic gland of horse. V, two large follicular veins. VC, venous capillaries in center follicle. AC, arterial capillaries.

their course the veins from the medullary substance. They may or may not accompany arteries and leave the gland through the hilus.

The arteries on entering the glands give off a few small branches to supply the capsule and overlying areolar tissue. These arteries lie on the capsule. They anastomose with the arteries coming from the gland substance. The veins accompany the arteries, some sink into the gland, while others follow the artery to the hilus of the gland where they join the large veins.

REFERENCES.

1. W. J. Calvert: The Blood Vessels of the Lymphatic Gland. *Anatomeischer Anzeiger*, Bd., xiii, 1897, p. 174.
2. W. J. Calvert: On the Blood Vessels of the Human Lymphatic Gland. *Johns Hopkins Hospital Bulletin*, Vol. XII, 1901.

THE REFLEX OF THE TENDO ACHILLIS.

BY CHARLES GILBERT CHADDOCK, M. D., St. Louis.

The diagnostic value of variations of the reflex of the tendo Achillis has been recognized by neurologists only within the last few years. Five years ago this reflex was rarely or never examined by certain observers of deserved international reputation in neurology who now investigate it as a matter of routine, as has been the habit of all clinicians with reference to the knee-jerk since absence of the reflex of the patellar tendon (Westphal's sign) became generally recognized as an early indication of tabes dorsalis. The period of uncertainty about the exact significance of variations of the knee-jerk was long, and classic works still contain the statement that absence of the knee-jerk occurs rarely in normal persons. Naturally the same misstatement is made with reference to the ankle-jerk. Once and for all, it should be recognized that absence of these reflexes, even though there be no other sign of disease in the individual, is in and for itself an abnormality, since it is an exception to a rule so general that it must be regarded as a law. The widest clinical experience has led the best observers to this conclusion. To illustrate the clinical value of these reflexes, and as an introduction to special consideration of the variations of the ankle-jerk, the following clinical experience is briefly given:¹

A boy of ten years presented a Sydenham's chorea; one ankle-jerk was found to be absent. The child recovered from the chorea, but absence of the ankle-jerk persisted. The mother presented nothing abnormal, but gave a history of spontaneous miscarriage. At special request the father came for examination, and was found to be affected with unsuspected tabes, with a history of long antecedent syphilis. Examination of the spinal fluid showed slight abnormality in the child and marked lympho-cytosis in the father.

In parenthesis, it should be noted that the opinion that the reflexes may be altered in chorea might easily have been used to explain the abnormality observed in the child. The persistence of the absence of the reflex after recovery from the chorea was a demonstration that it was independent of the chorea itself, and it was finally explained by a plausible organic cause.²

Variations of the ankle-jerk are of greater importance than those of the knee-jerk, for two reasons: (1) Absence of the ankle-jerk usually occurs earlier in tabes than absence of the knee-jerk; (2) exaggeration of the knee-jerk is only readily and positively demonstrated by the co-existence of exaggeration of the ankle-jerk expressed in ankle-clonus (foot-clonus).

To test adequately and judge the deep reflexes, certain general precautions must be observed. Since they are elicited by a blow, it is best to

employ a well-made percussion hammer. A hammer having a metal head protected by soft rubber, and a handle of whalebone that permits a certain degree of flexibility, seems best adapted to the purpose. A little practice in the use of the hammer enables the examiner to graduate the force of the blow; and if the striking surface of the head be not too large, limited areas may be chosen for the delivery of the blow—points of value in estimating the facility and degree of the reflex response and in limiting the excitation to the place desired.

The limb to be examined must be relaxed as far as possible. It is not always easy to obtain relaxation of the muscles. Many persons, when attention is called to a limb by the examiner, immediately increase the normal tension of the muscles quite unconsciously, and in some cases considerable patience is required to attain the desired condition. In order to facilitate this, we resort to various measures: The subject is made to close the eyes, to direct the eyes to the ceiling, or his attention is distracted by conversation. A special means which is said to "reinforce" the deep reflexes is Jendrassik's procedure, which consists of causing the subject to make a strong muscular effort with the upper extremities, such as pulling while the hands are gripped one in the other, or by leaning the head forcibly backward against the hands with the fingers interlaced behind the occiput, or by merely clenching the fists. This procedure probably serves to induce relaxation of the lower limbs, and thus permits a reflex to appear, which without it is feeble or seemingly abolished. Instead of "reinforcing" a reflex, it removes an obstacle to its appearance.

In order to satisfactorily test the ankle-jerk, the subject must be made to kneel on a chair or bed with the bare feet and legs projecting freely beyond the base of support. The surface on which the knees rest should not be so hard as to cause uneasiness and consequent contraction of the muscles of the legs. If the muscles of the legs are relaxed, to favor which the subject may be made to grasp firmly the back of the chair or other object used as a support by the hands, the foot may be shaken easily by a passive movement given to the leg. The blow of the hammer should be delivered squarely on the tendo Achillis—not on the muscles³, not on its insertion at the heel. The normal reflex movement that follows the blow is plantar flexion (extension) of the foot on the leg. In some cases this reflex is so readily excited that it may be brought out without removal of the shoes; in a few cases it may be elicited if the examiner grasps the foot while the subject is seated with the heel resting on the floor, and taps the side or the posterior surface of the tendon. Should the reflex fail to appear in these simpler positions, resort must always be had to the kneeling posture with the limbs bare.

The jar caused by the blow of the hammer must not be taken for a reflex movement. To avoid this error, which is hardly possible after one has become familiar with the true reflex, it is only necessary to observe

the muscles of the calf at the moment the tendon is struck, when the muscles will be seen to contract if the reflex is present or excited; while if the reflex fail to appear the muscles will be seen to tremble only as a mechanical result of the blow on the tendon.

The ankle-jerk is always normally present, and its absence or exaggeration is always indicative of organic disease of the nervous system, with the single exception about to be described.

Fractures of long bones in the vicinity of joints, and chronic irritative processes affecting joints, may, and often do, cause exaggeration of the related tendon reflexes that cannot be distinguished from exaggeration of them due to organic nervous disease. This is a fact of observation, an explanation of which has not been found.

The ankle-jerk, like the knee-jerk, varies normally within wide limits in the extent of movement, in quickness, and in the facility with which it is excited—in the same person at various times and in various individuals examined. There is no precise measure of what constitutes a normal ankle-jerk when the reflex movement alone of the foot is considered. Therefore, though we may properly say that an ankle-jerk is feeble or lively, as the case may be, we should not by these qualifying terms indicate or imply that the reflex is pathologically altered in one sense or the other, without basing such a conclusion upon additional evidence.

In order to decide the question whether a given state of the ankle-jerk is indicative or not of disease of the nervous system, we must first exclude the possible influence of a joint-affection, the possible obstacles of fibro-tendonous retractions, and local disease of muscles (degeneration after too tight bandaging) upon which the movement depends. These disturbing factors excluded, we may consider the indications afforded by alterations of the ankle-jerk with relation to the nervous system.

The reflex of the tendo Achillis may be wanting, weak, or abnormally increased.

It is easy to determine its absence, but it should not be regarded as abolished until every precaution has been taken in testing for it—position, relaxation, Jendrassik's procedure, repeated examination.

To be sure that the ankle-jerks are abnormally weak is a much more delicate matter, since they may be feeble normally in one case as compared with another. We are only justified in concluding that there is diminished (abnormal) response where there is a distinct difference between the two, one being strikingly feeble or difficult to excite, the other lively and easily brought out and unattended with the accompaniments of pathologic exaggeration later described. With both ankle-jerks lively, but with one markedly in excess of the other, we should look for evidence to prove that the apparent excess is pathologic. This is often found in certain peculiarities that exaggerated reflexes present. However, it must be remembered that the pathologic processes that cause

alterations of the reflexes usually produce their effects slowly, and therefore it may happen that we examine the reflexes at a time when, though altered to some extent, we are unable to draw a conclusion from the condition found, and we are forced to give an opinion of probability and await events.

The frank and unequivocal proof that a lively knee-jerk is the expression of an organic lesion of the nervous system lies in the added phenomenon of foot-clonus (ankle-clonus). Here the exception (joint-disease) already mentioned, of course, holds good.

Some observers maintain that pathologic foot-clonus may occur in hysteria, in fatigue, and in other purely functional conditions. Babinski, whose clinical competence no one would dispute, has never seen true pathologic foot-clonus in a case of functional nervous disease. During several years, members of the Neurologic Society of Paris, in answer to a challenge, have presented several cases of "hysteria" in which true foot-clonus could be elicited; but every one of these cases which were followed proved to be hysteria associated with organic nervous disease; one in particular at autopsy was found to have a transverse myelitis, that had been marked only by hysteric symptoms save for the presence of foot-clonus. If the most competent neurologists of Paris have in the course of years been unable to demonstrate true foot-clonus in a functional nervous condition, it may be concluded that its occurrence in functional nervous disorders is so infrequent as to make a very remote possibility one that can be neglected from a practical standpoint.

Foot-clonus, as the term implies, is a clonic, rhythmic movement, induced or occurring spontaneously under certain circumstances. It is examined for as follows: With the subject seated or reclining, the limb is lifted and slightly bent at the knee, with one hand of the examiner at the knee as a support; with the other hand the examiner grasps the foot near its extremity (the sole resting in the examiner's palm), and then suddenly and forcibly presses the foot upward in dorsal flexion, and maintains the foot in this position by continued upward pressure of moderate force—the force necessary varies with the subject, and in any case that employed must not be excessive. With this manipulation, foot-clonus, if it can be induced, appears as a rhythmic movement of alternating flexion and extension of the foot on the leg, so rapid that it presents the character of vibration of moderate amplitude. The clonus ceases immediately with removal of the upward pressure of the examiner's hand. For the excitation of foot-clonus, as in testing for the deep reflexes in general, relaxation of the muscles of the limb is necessary. When spasticity of the limb exists, as is often the case in organic cerebral palsies and cases of transverse myelitis, the relaxation obtainable can only be relative in degree, but it must be real in the sense that there be no voluntary innervation of the limb.

True foot-clonus is not always as distinct or frank as the foregoing

description would imply. In many cases the vibratory movement continues but a short time; in others, the movements are not rapid and soon cease; in still others, it is difficult to induce them. There are cases in which it would be hazardous to conclude that a few vibratory movements were those of true foot-clonus, unless there were other independent signs to aid in judging their nature.

The difficulties attending appreciation of foot-clonus arise from the fact that there is a foot-clonus which occurs in normal individuals; and a false foot-clonus occurs in hysteria.

When the test for foot-clonus is made on a normal person, if the subject make a moderately forcible movement of extension (plantar flexion) against the hand of the examiner, two or three jerks may be felt as the foot is forced upward, due to successive efforts of the subject to resist the opposing force by a steady contraction of the muscles. Such movements do not occur if the muscles are relaxed. These need never be taken for true foot-clonus with a little care in making and repeating the examination.

On testing normal persons a true physiologic foot-clonus may be excited in about one of ten (Babinski), if the subject is able, after instruction, to put all the muscles of the leg in a certain state of resistive tension and maintain it. This normal and, according to Babinski, true foot-clonus does not in itself differ from the foot-clonus so common in disease of the motor tracts of the spinal cord, for it is rhythmically vibratory and continues while the upward pressure is maintained; but voluntary muscular tension is necessary for its production. This clonus seems to be of the same nature as the vibratory motion of the foot that can be produced at will. "If one raise the heel from the floor while seated and allow the weight of the limb to rest on the ball of the foot, by a voluntary effort a rhythmic movement can be excited—the heel dances up and down". Once excited this movement continues as long as the tension of the muscles is maintained.

The false foot-clonus of hysteria is characterized in certain cases by irregularity of the movement due to irregularity of innervation that produces tension of the muscles; in many other cases of hysteria the clonic movements are really of the nature of tremor. In the latter instance they are characterized by the peculiarity that once excited by upward pressure, they continue after the upward pressure has been removed; and sometimes in such cases, with the subject in the kneeling position for examination of the ankle-jerk, an identical phenomenon is induced by the blow of the hammer. In any form of false foot-clonus due to hysteria there is conscious or unconscious tension of muscles which makes the phenomenon possible.

The foot-clonus that occurs in some cases of chronic disease of the ankle-joint, as has been stated, does not differ from the true foot-clonus of organic nervous disease, and therefore in the presence of a nervous

trouble and affection of the ankle-joint it might be impossible to base any conclusion upon the presence of ankle-clonus unless all other signs of organic nervous disease were wanting, and the nervous symptoms present were clearly of a functional character. Then the clonus should be referred to the joint affection as its probable cause.⁵

Of this discussion we may make the following summary:

There are four kinds of foot-clonus: (1) True (pathologic) foot-clonus, occurring as an unequivocal sign of organic nervous disease, and distinguished by the rapidity and regularity of the clonic movements; by its occurrence with relaxation of the muscles of the leg; by its cessation with the arrest of the exciting upward pressure. Imperfect foot-clonus, similarly marked, has the same significance. (2) True (physiologic) foot-clonus, observed in normal persons, distinguished by the necessary accompaniment of tension of the muscles of the leg. (3) True (reflex) foot-clonus, occurring in association with chronic disease of the ankle-joint. (4) False foot-clonus, occurring in functional nervous disorders, distinguished by irregularity of the movements, or by continuance of the vibratory movements after removal of the exciting upward pressure, so that the vibration becomes a spontaneous tremor.

If we are able to determine clinically the enfeeblement, absence, or exaggeration of one ankle-jerk, or of both, what conclusion can be drawn from our observation?

For practical clinical purposes, it may be asserted that functional nervous conditions have no effect upon the reflexes in themselves, or, in any event, no effect that can be utilized for practical medical purposes. Therefore, actual enfeeblement or absence of the ankle-jerk tells us that there is an impediment or interruption in the reflex arc concerned, so that nervous energy passes through it feebly or not at all. As far as known, there is but one other cause for diminution or loss of a deep reflex: Complete solution of continuity of the spinal cord above the level of the point where the reflex arc passes through the spinal cord (Bastian).

If we have found a true ankle-clonus, we know that the reflex arc is intact. Exaggeration of the deep reflexes is caused only by disease or lesion implicating the motor tracts that lie wholly within the central nervous system. Therefore, pathologic ankle-clonus proves that at some point above the spinal center of the ankle-jerk there is an actual organic lesion of some kind implicating the fibres of the cerebro-spinal motor path that are related to the spinal motor centers controlling the muscles upon which the ankle-jerk depends.

Since these statements are true of all deep reflexes, we may make the following general rule:

Loss of deep reflexes proves the existence of organic disease of the reflex arc; exaggeration of deep reflexes proves organic disease of related cerebro-spinal motor paths.

REFERENCES.

1. Clinic of J. Babinski, 1905.
 2. There is reason to regard chorea (hysteric imitation of it excepted) as an organic nervous disease, but the most careful search has thus far failed to reveal absence of deep reflexes in it that could not be explained by other conditions than the chorea itself. Babinski.
 3. Idio-muscular contraction may, and often does, occur when related deep reflexes are abolished.
 4. Chaddock, *Outlines of Psychiatry*, p. 80.
 5. A possible explanation of the exaggeration of tendon-reflexes related to diseased joints suggests itself: Irritation in a joint may induce reflexly increased tension or tone in related muscles and thus cause unconsciously a muscular state akin to that voluntarily induced to facilitate the occurrence of foot-clonus in normal persons.
- 3750 Lindell Blvd.

A STUDY OF THE ANATOMY OF CONGENITAL DISLOCATION OF THE HIP AFTER MANIPULATIVE REDUCTION*

BY NATHANIEL ALLISON, M. D., ST. LOUIS.

Our appreciation of the anatomical conditions that exist after the congenitally misplaced femoral head is manipulated back into its socket, depending as it does almost entirely upon the study of skiagrams and physical examination, is of a more or less indefinite character. In fact the anatomy of congenital hip dislocation, either before or after manipulative treatment, is rather more conjectural than positive. That this is true is due to the nature of the conditions, making it rarely possible to obtain material on which to base positive anatomical assertions. It may be assumed that each of these cases presents different anatomical features, that what is true in one case will not be true in the next, but it is at the same time probable that to all these cases certain facts of anatomy are common.

My object in this study is to describe the anatomy of the hips found in a case of double congenital dislocation which died in the fourth month after manipulative reduction.

The history of the case is briefly as follows:

A Navajo Indian girl, aged seven years. No family history or previous history. Is well developed and muscular, walks with characteristic waddle, has marked lordosis. Trochanters $1\frac{1}{4}$ inches above Nelaton's lines. Diagnosis, double congenital hip dislocation established by skiagram.

She was operated upon on October 20, 1904.

The age of the child and her muscular development made the reduction difficult. It was accomplished, however, in an entirely satisfactory manner according to the Lorenz technique. She was put into a double plaster of Paris spica in the position called by Lorenz the "primarstel-

*Presented by invitation at the Nineteenth Annual Meeting of the American Orthopedic Association, Boston, June, 1905.

lung" (right angle abduction). She recovered well and was soon about on a roller chair. In December she had diphtheria which left her in a weakened general condition. Early in January she developed symptoms of tubercular meningitis. She died January 24, 1905.

At the autopsy the entire pelvis with the upper half of each femur was removed. The disturbance of any of the structures that go to make up the hip articulations was carefully avoided. As a whole, this specimen, comprising the pelvis with the femora in right angle abduction, presented the following appearances: The bones of the pelvis are strong and aside from the acetabular region they are apparently of normal conformity, as are also the shafts of the femora. The thighs are flexed to a 90° angle with the vertical axis of the body and are abducted to the extent that their long axis are in the frontal plane. Each femur is externally rotated to slightly more than 90°, bringing the great trochanters below and behind into close relationship with the tuber ischii. The lesser trochanters point slightly forward and upward. A prominence made by either femoral head is visible just external to the margin of either acetabulum. The outer halves of the pectinei muscles are torn from their origin along the ilio-pectineal line, exposing to view the anterior portions of each joint capsule taut over the femoral head. The muscles have adapted themselves to the position as have the fasciæ latæ.

The specimen was frozen and by means of a fortunate saw cut the right side was sectioned in a transverse diameter of the acetabulum and the mid-frontal plane of the femur.

Plate I shows a section of the right side and a partial dissection of the left side. The section shows the position of the femur relative to the acetabulum. The superior surface of the neck of the femur rests against the posterior inferior quadrant of the acetabular rim. A zone of about one-third of the femoral head is properly in the acetabulum, this zone being its upper and external aspect.

Plate II was made to show the section in greater detail—to allow a better view the head is held away from the floor of the acetabulum.

The acetabulum is not a spheroidal concavity, but is a broad and shallow depression. Its surface is covered by a layer of fat and connective tissue which is approximately 3 mm. in thickness. The deficient cotyloid ring appears at the posterior aspect of the rim, turned in on itself by the neck of the femur. An abnormally long ligamentum teres is present, it is a flattened membranous structure, pointed at the ends and with normal attachment to the femoral head. At no point is the joint capsule folded into the cotyloid cavity before the head. It is stretched over the head anteriorly, its posterior portion is redundant, exceedingly thick and thrown into folds. The head of the femur is not hemispherical, but is flattened on its internal aspect.

On the left side a dissection was made. Plate I shows the anterior view of this dissection. The adductors longus and brevis have been di-

vided, the psoas and iliacus cut away and the abductor magnus retracted. As before mentioned the outer half of the pectineus was torn from its origin at the time of operation. The anterior portion of the capsule is taut over the femoral head: the ilio-femoral band lies well to the outside of the head, due to its relaxation in this position. The lesser trochanter points forward, showing the amount of external rotation of the femur. During the dissection, evidences of old hemorrhages and laceration were seen, especially in the adductor group. The anterior division of the obturator nerve showed marked increase in size.

Histological examination revealed the fact that the muscular tissue of the adductor group, especially the adductors magnus and brevis, exhibited pronounced evidences of trauma. This was shown by fragmentation, degeneration, atrophy and a considerable effort at regeneration. Also that entire muscle bundles had lost the staining properties of their contractile substance, as had also the muscle nuclei in certain areas. These degenerated muscle bundles are sharply outlined by a number of regenerated muscle nuclei. Where fragmentation had occurred a considerable interval frequently separated the portions of the muscular elements involved, this interval being filled with connective tissue and muscle fiber debris. The intermuscular connective tissue is increased in amount. Old hemorrhage is evidenced by hematogenous pigments in the form of crystals of hematoïdin scattered throughout the tissue of the abductor muscles. Examinations of portions of the obturator nerve show it to be the seat of an interstitial neuritis. The connective tissue of both epineurium and perineurium are much increased. Many of the axis cylinders composing the funiculi have degenerated, a portion showing no medullary sheath whatever.

The epineurium of the anterior division of the obturator nerve was found to be inseparably adherent to a mass of striped muscular tissue.

A dissection of the posterior surface of the left side is shown in Plate III.

Here the much shortened fascia lata, with the upper and posterior portions of the gluteus maximus, have been cut away, the gluteus medius separated from its origin and retracted: portions of the great sciatic nerve and the pyriformis muscle have been resected. This affords an unobstructed view of the *pelvitrochanteric muscles*, a group composed of the obturator externus and internus, the gemelli, the pyriformis and the quadratus femoris. In this the "primarstellung," the great trochanter, to which these muscles are attached, and the tuberosity of the ischium, are brought into close contiguity. Consequent to this approximation of origin and insertion this group of muscles has become much shortened, this shortening, is evident, preventing adduction and inward rotation of the femur, more especially the latter.

The left side was now stripped of tissue down to the bone and joint capsule.

An interior view of the joint is shown in Plate IV.



FIG. 1.—Anterior view of specimen, showing frozen section of right side and partial dissection of left side.

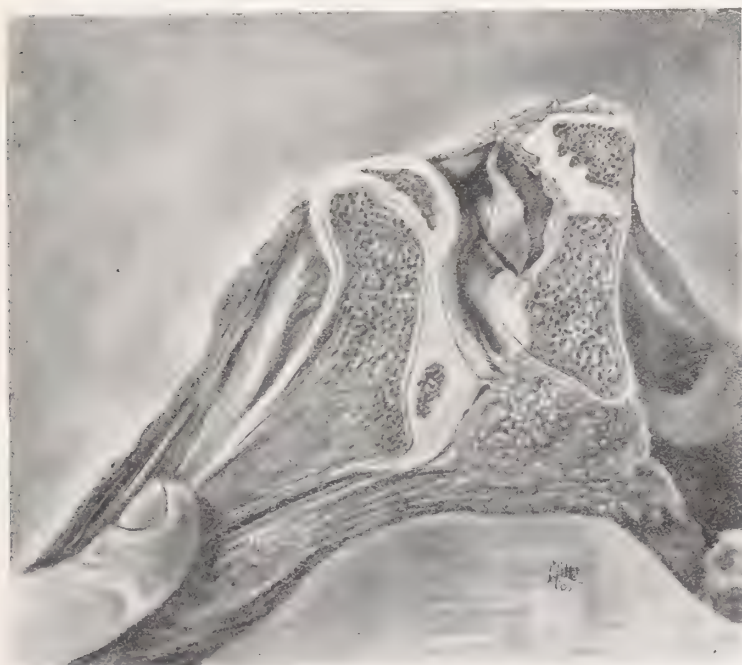


FIG. 2 —Detail drawing of frozen section of right hip joint.



FIG. 5.—Anterior view, femur adducted, internally rotated and flexed to angle of 90 degrees Extension beginning.



FIG. 6.—Anterior view, showing ilio-femoral band taut, relaxation due to a continuation of the extension begun in figure 5.



FIG. 7.—Posterior view showing joint cavity, head of femur and posterior capsule.

The accessory bands that strengthen the capsule anteriorly are here shown. The ilio-femoral—inverted Y ligament—is relaxed and lies entirely external to the head. The pubo-femoral band is taut. Experimenting with this articulation I was forcibly impressed with the importance these ligaments bore to the reduction of this particular congenital dislocation, as well as the part that they might play in its retention.

In the congenital position the relations between the points of attachment of these bands are so changed that their development must necessarily make them more or less inconsistent with the reduced position. Also they are of non-elastic texture, being composed of white fibrous tissue. The pubo-femoral band stretches across from the anterior surface of the pubic ramus to the neck of the femur, external and superior to the lesser trochanter. It would necessarily be developed longer than the normal. The ilio-femoral band stretches from the lower part of the anterior inferior spine and an impression just below it to the anterior intertrochanteric line of the femur. It would necessarily be developed abnormally short.

These bands must have been of great importance in weight bearing, in consequence they are abnormally strong.

To the Lorenz procedure the pubo-femoral band would offer no interference, indeed in this case its action seemed to be favorable. Retracing the operative steps, the thigh is flexed and the head is brought behind the acetabulum, abduction is begun. The adductor group of muscles is stretched or ruptured. As abduction is continued a certain amount of external rotation is produced as this band begins to tighten. As abduction approaches the frontal plane this band is tightened to its limit. The head is now on the posterior rim. The attachment of this band to the femur now becomes a pivot about which the bone swings when the head is lifted into the socket by the upward pressure of the hand on the trochanter major. Extreme abduction would result in the rupture of this band. The head would then possibly pass forward through the rent to a sub-pubic or anterior position.

The ilio-femoral band is relaxed by the right angle flexion of the position, as abduction is produced the head of the femur passes forward and upward under this band. In the position of right angle abduction with the head reduced, this ligament has taken up a position well external to the head and is not on the stretch. Its influence on reduction after the Lorenz method is consequently nil. Its importance, on the other hand, when the after treatment is begun must be great. Being developed short and abnormally strong it would offer an absolute resistance to the return of the thigh to the normal position. In Plates V and VI its action in this case is shown. In Plate V the femur is adducted and internally rotated to the normal position, but it is flexed to an angle of about 90°. As extension in this position is begun this ilio-femoral

band becomes taut. Forcing the extension results in dislocation, as is shown in Plate VI. The head being thrown against the posterior superior quadrant of the acetabulum, which is markedly deficient in development, and against the posterior capsule, it meets little resistance and is forced out of the acetabulum.

The capsule was now cut along the posterior margin of the acetabulum. This allows a good view of the joint cavity and is shown in Plate VII.

The entire upper end of the femur is bent slightly forward from the shaft. The head of the bone is irregularly faceted, and is conical rather than spherical in shape. The neck is short and is placed at an angle of 100° with the shaft; it is also directed backwards to an angle of 20°. The cartilage of the head extends over the front and upper surface of the neck. In the latter place it is covered with dense connective tissue, and is grooved to receive the posterior margin of the acetabulum with its fold of cotyloid ring and capsule. The capsule is redundant and much thickened posteriorly. There is an abnormally long ligamentum teres present. Its femoral attachment is normal, the acetabular end is pointed and its connection is obscure, seemingly blended in the connective tissue near the cotyloid notch. The acetabulum is shallow, of triangular shape, with base posterior. The superior and inferior margins conform to the shallow curve of the depression, noticeably so in front, where normally the rim is so prominent. The posterior margin is a thick fold of capsule and cotyloid ring. The bottom of the depression presents no cartilaginous surface whatsoever; cartilage is present, but it is covered by connective tissue and fat.

The anatomy of congenital dislocation, as described in the few cases reported, is not of satisfying completeness. The following is a short summary of the principal anatomical points mentioned in the reports I was able to discover:

LOCKWOOD (1887): Double posterior dislocation. Femoral heads irregular, acetabula deep with cartilaginous margins, ligamentum teres exceedingly long.

PHELPS (1891): Upward and forward dislocation. Acetabula small, undeveloped, angular in shape, containing remains of ligamentum teres.

BRADFORD (1894): Single case, which died after open operation. By no form of traction was it possible to bring the head of the femur down to the acetabulum, even after all the muscles had been removed. Reduction could only be accomplished by abduction and rotation. The obstacle was clearly the anterior and strongest fibers of the capsule.

BRADFORD (1898): Double case. Open operation on one side, manipulative reduction on the other. In the manipulated side the cotyloid ligament was between the head and the acetabulum. The side upon which open operation was done showed reposition.

M. BILHAUT (1895): Double case. Capsules relatively large, nor-

mal shape. Heads of femora sensibly flattened before and behind. Ligamentum teres present with normal attachment, but thin, long and vermiform.

ADAMS (1895): Six cases from the London Museum. These agreed in the following points: Acetabula represented by triangular flattened depressions, heads of femora irregularly flattened. In some cases the femoral neck showed changed directions, this varying greatly in degree. Capsule dilated, elongated and greatly thickened.

CHASSNER (1902): Double case, died three years after operation. Had return of normal function to both joints. Acetabula almost as deep as normal, head irregular in shape. What appears to be remains of ligamentum teres present.

WILSON and RUGH (1904): Double case. Heads of femora slightly flattened. Acetabula flattened. Ligamentum teres occupies greater part of the acetabulum, thick in the middle, expanding at each end, seems large enough to prevent reposition.

These cases with my own, represent anatomical data on at least twenty-two congenital hips. We are enabled to form an idea from the observation of these cases as to the obstacles that must be overcome in the reduction and retention of this dislocation. It is to be regretted that the anatomy of many of these cases has not been more fully described.

Sherman has stated that relaxation results from imperfections in the size and shape of the acetabulum, both relatively and absolutely to the femoral head. Bradford has shown that the anterior bands of the capsule are strong enough to prevent reduction except by flexion, abduction and rotation of the limb. He has also pointed out the disadvantages that follow the shortening of the *polytrochanteric* muscles necessary to the "frog position." Lorenz has laid special stress on the danger of relaxation that is incurred in bringing the leg down from the "primarstellung" by force. He insists on the importance of returning the leg to the primary position in order to offset the danger. Little attention has been paid to the importance of the ilio-femoral ligament, both as an obstacle to reduction by any other method than the Lorenz procedure, as well as to the part it plays in the relaxation of the reduced hip. Considerable importance has been attributed to the twist of the femoral neck and to the folding in of the joint capsule before the head.

From an anatomical standpoint the obstacles to be overcome in these cases may be summarized as follows:

An acetabular cavity not of normal development.

A femoral head that is more or less irregular in shape.

A changed direction in the neck of the femur.

An adductor group of muscles too short before operation, and after operation injured both as to muscular elements and nerve supply.

All the posterior muscles with the fascia lata and the ilio-tibial band much shortened.

A much shortened group of pelvitrochanteric muscles.

An ilio-femoral band abnormally short and strong. On this last element I wish to place especial emphasis.

NOTE.—My thanks are due to Dr. Robert Terry, professor of anatomy in Washington University, for the valuable assistance he has rendered in this study.

LITERATURE.

1. Lockwood; Transactions London Pathological Society, vol. xxxviii, p. 303.
2. Phelps: Transactions Amer. Orth. Association, vol. iv, p. 133.
3. Bradford: Transact. Amer. Ortho. Association, vol. vii, p. 92.
4. Bradford: Transact. Amer. Ortho. Association, vol. xi, p. 429.
5. Bradford: Transact. Amer. Ortho. Association, vol. xiv, p. 214.
6. Bradford: Transact. Amer. Ortho. Association, vol. xv, p. 269.
7. Bilhaut: Trans. Amer. Ortho. Association, vol. viii, p. 269.
8. Adams: Trans. American Ortho. Association, vol. viii, p. 305.
9. Ochsner: Annals of Surgery, vol. xxxvi, No. 2.
10. Wilson and Rugh: Amer. J'l. Ortho. Surgery, vol. i, p. 251.
11. Sherman: Trans. Amer. Orth. Association, vol. xii, p. 133.
12. Lorenz: Heilung der Ang. Huftgelenks Verrenkung, Leipzig und Wien, 1900.
13. Lorenz: American Medicine, June 19, 1904.
14. Lorenz: Trans. Amer. Ortho. Association, vol. ix, p. 254.
15. Taylor, H. L.: Trans. American Ortho. Association, vol. x, p. 167.
16. Wolf, Julius: Zeitschrift f. Ortho. Chir., bd. ii, hft. 1.
17. Elliott: Trans. Amer. Orth. Association, vol. vii, p. 282.
18. Whitman: Trans. Amer. Orth. Association, vol. xiv, p. 269.
19. Vogel: Zeitschrift f. Orth. Chir., bd. xiv, hft. 1.

WILLIAM HARVEY AND OUR DEBT TO HIM.*

BY E. P. LYON, M. D., St. Louis.

In order that we may appreciate at its proper value a great discovery like that of the circulation of the blood, it is necessary that we put ourselves as nearly as possible into the attitude of mind of men who lived before or at the time the discovery was made. As we look around us to-night in this brilliantly lighted amphitheater, we accept without even a thought the wonder of the electric light. What do you suppose would be the exclamations of our great-grandfathers if they were suddenly brought here? So, as medical students, you have studied the course of the blood through the body, have learned of its ceaseless motion away from the heart, out through the arteries, back through the veins—in truth, the circulation. You have accepted without special thought this fundamental fact in physiology, and have built practically the whole structure of your medical knowledge upon it. To accept the fact has been easy. It seems to you that no idea could be more simple. Can you, with equal ease, put yourself in a condition where the foundation

*One of a series of historical lectures delivered before the students of the St. Louis University Medical School (Marion-Sims-Beaumont) by members of the faculty.

stone of your work—the fact of the circulation—was unknown, undreamed of? I fear it will be difficult.

Suppose, however, that you, like Mark Twain's Connecticut Yankee, can be projected backward in time just three hundred years. It is 1605. James I is on the throne of England, having recently succeeded Queen Elizabeth. Shakespeare is in the height of his power, and has just finished his incomparable tragedy of King Lear. Two years must still go by before the settlement of Jamestown, and fifteen before the pilgrim fathers will land at Plymouth Rock. Sixty years have flown since De Soto discovered the Mississippi, but nearly eighty more must pass before La Salle, floating down the Illinois and Mississippi, will be the first white man to look upon the site of St. Louis. Therefore, if you are studying medicine, it is not in this untrodden wilderness. Let it be in London, where already for many years the College of Physicians has been a growing power.

I cannot stop to describe the methods of treatment with which you are being made acquainted, ranging as they do from bloodletting to incantations. Therapeutics is no "snap course," for single medicines sometimes contain as many as fifty ingredients, and the pharmacopœa recognizes everything on sea or land, from crab's eyes to viper skins. Let us ask, rather, what is the teaching of anatomy in these days, for physiology is not yet a distinct science.

Queen Elizabeth, in 1565, had granted the College of Physicians the right to take yearly the bodies of four malefactors, executed for felony, for dissection. Later the charter of James I increased the number of bodies to six. Why the number should have been so small, especially at a time when capital punishment was so much more common than now, seems strange at first. It becomes more clear when we think that you as students would not in all probability have touched the cadaver at any time in your medical study, for "anatomy was taught practically in a series of demonstrations upon the body."

The College of Physicians at the time of which we speak had an endowed course of lectures, founded some years before by Lord Lumley and Dr. Caldwell. In addition to certain prescribed teaching of surgery, the lecturer was directed by the founders, at the end of winter, "to dissect openly in the reading place all the body of man, especially the inward parts, for five days together, as well before as after dinner, if the bodies may last so long without annoy." This provision, again, sounds strange to our ears, but when we remember that they had no means of preserving the body, the custom of having two lectures a day, and of finishing the anatomical work in from three to five days becomes perfectly clear to us. The Surgeons' Company also held similar "Public Anatomies."

Now, let us imagine that in the year 1605 we have gathered to hear a lecture on anatomy. We are formally arranged in the order of rank,

and dressed in proper cap and gown, as becomes the station of each. Promptly on the hour appears a procession of functionaries, each in his livery or gown: First, the clerk; then the doctor; then the "Masters of the Court." All having been seated with ceremony, the clerk hands the doctor the wand with which he is to point out the various structures of the body; and two demonstrators, scalpel in hand, having meanwhile taken position by the body, the lecturer begins. For three-quarters of an hour he speaks in Latin, the official and international language of the day; then, for one quarter of an hour, he explains in English for the benefit of such of us as understand not the ancient tongue. Most likely the lecturer sits at the table and only touches the structures with his wand, and explains them as they are laid bare by the assistants. At any rate, one hundred years before this time it would have been far beneath the dignity of a great doctor to have dissected with his own hands. Barbers were called upon for such menial work. Now, through the influence of Vesalius, a new era in anatomy has well begun; and perhaps we may see the lecturer himself take scalpel in hand and dissect out some difficult portion.

The subject of this day's lecture is the Thorax. The demonstrator displays the heart and lungs. Let us mark well what the lecturer says, for in the contrast we shall learn the greatness of Harvey. Listen, then, to an imaginary lecture on the heart and blood, in the year 1605:

"The heart, gentlemen, consists of two chief cavities, the right ventricle and the left ventricle. All the vessels attached to the right side of the heart are called veins. The vein which goes to the lungs is very large, strong, and in structure like an artery, hence it is called the artery-like vein [now, pulmonary artery]. The veins carry blood from the heart to all parts of the body for their nourishment. The blood receives from the stomach and intestines supplies of food, and is further elaborated in the liver. This blood thus prepared and full of 'natural spirits,' but crude and lacking 'vital spirits,' is sucked into the right ventricle during its diastole and immediately drawn back again into all the organs during the systole. Thus the diastole is the time of activity and the systole is the rest period of the heart. The artery-like vein [pulmonary artery] carries blood to the lungs for their nourishment. In the veins are many little doors or valves, as Fabricius has well shown. These again are wonderful structures. They are always directed towards the heart, and were 'formed by nature,' as Fabricius says, 'in order that they may, to a certain extent, delay the blood and so prevent the whole of it flowing at once [from the heart out through the veins], like a flood, either to the feet or to the hands and fingers, and becoming collected there.'

"The left ventricle likewise gives origin to a series of tubes, and these are the arteries. The arteries are much thicker than the veins: all except the one great artery which goes to the lungs from the left ventricle and is very thin and in structure like a vein. Hence we call it the vein-like artery [now pulmonary vein.] The arteries, we believe with Galen, are filled with blood, and not with air or spirits as Erasistratus of the

ancient Greeks taught. This blood in the arteries and in the left ventricle is different from that in the right ventricle, being bright crimson and full of 'vital spirits.' These wonderful spirits are concocted in the left ventricle by its heat (from air from the lungs), and there mixed with the blood. Thus the pulmonary vein has for its use to bring air to the blood for the manufacture of vital spirits. At the union of the auricle and ventricle, also where the aorta joins the ventricle we find valves which prevent the vital spirits from going back to the lungs.

"The blood on the left side of the heart, like that on the right side, is in a ceaseless state of ebb and flow. During diastole it is sucked into the left ventricle; but immediately, the arteries by active expansion or diastole suck it back and fill themselves like a bellows, and then we feel the pulse. Thus the systole of the heart corresponds in time but not in any other way to the diastole of the arteries. The arteries carry vital spirits to the tissues, by which the latter are kept alive. Also the arteries absorb vital spirits or air through the skin and in their systole squeeze out vapors through the same. And especially they carry blood to the brain where are generated the rarest and highest essence, 'animal spirits,' which flowing out into the nerves and unmixed with blood, supplies force to the muscles and causes them to move. Thus we have three kinds of spirits; first, the 'natural spirits,' contained in the blood of the right ventricle and veins and serving the lower orders of nutrition; second, the 'vital spirits,' hot and ruddy and subtile, formed in that furnace of the body, the left ventricle, from the air drawn into it through the vein-like artery and serving the higher purposes of nutrition; and finally, the 'animal spirits' which run in the nerves and arouse activity and motion [so that we to this day say of the young, that they are full of animal spirits.]"

"Nor are we yet through with these wonderful matters, for it surely is necessary that new crude blood should reach the left side of the heart from the right for the renewal of the supply and that new vital spirits may be engendered. Therefore the blood sweats through the septum between the right and left ventricle, finding its way by innumerable pores too small for the eye to see. So Galen says and so we believe. Here endeth the lecture."

The foregoing is what we might have heard concerning the motions of the blood three hundred years ago in the city of London. Starting with the error that the veins carry blood from the heart, we find built up such a mass of wrong observation, incorrect inference and wild imagination, that to us it seems but a nonsense tale. Yet this as simply as I can state it was the belief concerning the heart from the second century, when Galen lived, to the seventeenth, so great during all the centuries between was the authority of Galen and so little the impulse to original investigation. Be sure to gather in the fundamental ideas of the old teaching; the veins carry blood out from the heart; the arteries carry a different kind of blood; the pulse is an active process which sucks blood out from the heart; the heart is a sort of gland that concocts spirits and produces heat; the active period of the heart is its diastole; the blood passes from right to left ventricle through the septum;

the pulmonary artery is to nourish the lungs; the pulmonary vein is to carry air to the left ventricle. Gather all this in and imagine yourselves as medical students, taking it down in your notes as law and gospel. Does it not seem impossible and absurd?

Now we are on the threshold of a new era; and here, perhaps, in this very audience which in the year 1605 has listened to the discourse on the heart is a young doctor whom we will do well to observe. He is a small man, quick in his movements, vivacious and friendly, yet easily stirred to anger. His little black eyes snap even now and his round face expresses disapproval, with difficulty restrained, as he listens to the bold assumptions of the lecturer and his servile adherence to authority. We see a smile of incredulity at such wild inferences as the sweating of the blood through the septum of the ventricle. Already we imagine he has begun to doubt the old theories. Already, in the abundant leisure given to most young practitioners—given, it would seem, that they might devote their best years to original investigation, but given in vain in a majority of cases—already, probably, he has begun the experiments which shall inaugurate a new era in medicine and establish the new science of physiology. The young doctor of seven and twenty, keen, studious, courteous, traveled, man of the world, linguist, graduate of two universities, familiar with all the medical lore of his time—mark him well! He it is who shall bring order out of a chaos of observations, interpretations, guesses and philosophic dogmas dating, some of them, from the time of Homer; he shall sluice out the grains of golden fact from among the sands of error; he shall add essential new facts from the mine of his own industry and perspicuity; and with a fine fire of scientific imagination smelt them all into one philosophic whole, the idea of the circulation of the blood, and make of it a jewel which shall adorn his fame as long as man exists and continues to study man. This young doctor is William Harvey.

He was born at Folkestone on the Strait of Dover, in the year 1578. His father is described as a "yeoman" or freeholder. He was well-to-do and influential, being mayor of Folkestone in the year 1600—"a man of more than ordinary intelligence and judgement." Of the mother little is known except a record of virtues on a brass tablet still extant in the Folkestone church. We may imagine, as Willis does, that she was the first teacher of her illustrious first-born son. At ten years of age he was sent to the grammar school at Canterbury, where the chief instruction, then as now, was in Latin and Greek. At sixteen he was enrolled at the University of Cambridge, and having decided already upon medicine as his profession, was drilled in the classics, physics and logic as the best preparation for medical studies. In 1597, when he was nineteen, Harvey graduated from Cambridge as a Bachelor of Arts, and was ready for professional study. At that time the universities of Northern Italy were famous as centers of learning. And to that of Padua, the

university town of the Republic of Venice, renowned for its anatomical school, young Harvey betook himself. Here sixty years previously Vesalius had redeemed anatomy from the thralldom of authority and had elevated the teaching of it from a mere reading of what Galen wrote to an appeal to what Nature says and the scalpel reveals. Here for a year or two Realdus Columbus had followed Vesalius as anatomy lecturer; and he, Professor Huxley believes, is entitled to credit as the discoverer of the pulmonary or lesser circulation, though many others consider him a mere plagiarist from Servetus. Here Fallopius, from whom the Fallopian tubes were named, was later the professor of anatomy; and here at the time of Harvey's matriculation the famous Fabricius filled the chair. Fabricius, as describer and rediscoverer of the valves of the veins, was honored and celebrated, although, as has been well said, he "could observe and he could describe, but he wanted the combining intellect that infers, the imagination that leads to new ideas—to discovery." It was Fabricius most likely who chiefly drew Harvey to Padua, and from that master the young Englishman received much information and inspiration, but not, we may be sure, the suggestion of the circulation, for Fabricius nowhere in his writings gives even a hint of such an idea. On the contrary, he carefully follows the conventional teaching, and distorts and perverts the functions of the valves to conform to Galen's views.

Of Harvey's life at Padua we know little. He was one of the leaders of the English student body there, and a tablet commemorative of his student days has recently been discovered. He took his degree of Doctor of Physic there with high honors in the year 1602, his diploma reciting that "he had conducted himself wonderfully well in the examination, and had shown such skill, memory and learning that he had far surpassed even the great hope which his examiners had formed for him."

Harvey immediately returned to England, and obtained his "M. D." at Cambridge the same year. Soon after he located in London, where he was not without influence, as several of his brothers were prosperous merchants, and one held a post at the court of James I.

And now in the year 1605 we have imagined him attending the lecture on anatomy, and already, as Power says, "probably occupied in making those observations on the heart and blood vessels which have since rendered his name famous." Indeed, his lectures "show an intimate acquaintance with the anatomy of more than sixty kinds of animals," besides the human body. We must pass along with just a mention of various records which show how Harvey was increasing in influence and the esteem of his contemporaries. For example, in 1607 he was elected Fellow of the College of Physicians; in 1609 he became Physician of St. Bartholomew's Hospital.

We come now to the month of April in the year 1616, when Harvey,

having been appointed Lumleian Lecturer in the College of Physicians, first gave his anatomical lecture. Again, no doubt, the same ceremonious opening was observed that we found eleven years before. Again was the wand (still preserved at the College of Physicians) placed in the lecturer's hand. But how different now is the teaching of the functions of the heart and blood vessels! By a wealth of experiments, a wide reference to comparative anatomy, a comprehensive knowledge of clinical and pathological conditions, and with a logic simple, straight and incontrovertible, he drives home to his astonished hearers the story of the circulation. As is shown by his notes on those lectures, discovered only a few years ago, he was already clear on the essential points of this discovery. These are his words, translated from the jargon of Latin and English in which the notes are written: "It is plain from the structure of the heart that the blood is passed continuously through the lungs to the aorta as by the two clacks [or valves] of a water bellows to raise water."

"It is shown by the application of a ligature that the passage of the blood is from the arteries into the veins."

"Whence it follows that the movement of the blood is constantly in a circle, and is brought about by the beat of the heart."

Although it is plain from these notes that the central idea of the circulation was already clear in Harvey's mind, he continued to experiment and discuss the matter in his lectures for twelve years before he published his "*Anatomical Disquisition on the Motion of the Heart and Blood*,"* in which his discovery was made known to the world. Written in Latin, and published at Frankfort, this little treatise of seventy-five pages contains a matured account of the circulation of the blood, developed in such a masterly fashion, embellished with such wealth of fact, and presented with such logic and argument that Huxley pronounced it a "typical example of sound scientific method, and of clear and concise statement." And another says, "It constitutes the earliest record we possess of a really scientific investigation in the domain of biology based on systematic observations and experiment." It is the "precursor and prototype of the modern monograph."

Time will not permit of extensive excerpts from Harvey's book. It is available in the excellent translation of Willis and should be read by every physician and every scientist. I confess myself more than repaid for the time spent on this lecture, in that it led me to read Harvey's masterly work.

Let us, however, in the few minutes at our disposal, study the methods of Harvey and the results that followed the publication of his book.

In an introduction of a few pages he reviews the theories previously maintained and some of which we have described. "These various opin-

* The title was, "*Exercitatio Anatomica de Motu Cordis et Sanguinis*."

ions," he says, "are seen to be so incongruous and mutually subversive that every one of them is not unjustly brought under suspicion."

After giving an experiment of Galen which was supposed to prove that the diastole of the arteries is an active process, and that they are filled by suction of their own, and criticising the method of the experiment, he continues: "But the contrary is obvious in arteriotomy and in wounds, for the blood spurting from the arteries escapes with force, now farther, now not so far, alternately, or in jets; and *the jet always takes place with the diastole of the artery, never with the systole*, by which it clearly appears that the artery is dilated by the impulse of the blood." How stupid were our ancestors, we are tempted to say, that they could not recognize facts so obvious and so closely related. Let us rather praise the genius of Harvey that could see where others were blind; for the future Harveys and their followers will wonder, no doubt, that we of the twentieth century were unable to shake off the shackles that bind us to many accepted views, so as to see things which are open as noonday.

Again, concerning pores in the septum of the ventricle Harvey says: "But, in faith, no such pores can be demonstrated, neither in fact do any such exist. For the septum of the heart is of a denser and more compact structure than any portion of the body, except the bones and sinews. *But even supposing that there were foramina or pores in this situation, how could one of the ventricles extract anything from the other—the left, e. g., obtain blood from the right—when we see that both ventricles contract and dilate simultaneously?*" You see he has observed correctly and then thought it all out; his knowledge of physics serves him well; and he hits the nail on the head every time.

Having disposed of the old views by arguments and appeals to well-known facts, Harvey proceeds to prove his new and startling proposition. Let us briefly inquire into his methods and arguments.

First, there is the method of vivisection. By the most thorough and careful work on many classes of animals, from dogs to snails and lobsters, Harvey gives us the first correct picture of the action of the heart. He shows that it becomes erect and hard during its systole, and that the systole, therefore, corresponds to the contraction of ordinary muscle and must be the period of the heart's activity—a statement in direct opposition to old views. He states that the heart becomes smaller and paler during the systole, *i. e.*, blood is forced out of it; and "no one," he adds, "need remain in doubt of the fact, for if the ventricle be pierced the blood will be seen to be forcibly projected outwards upon each motion or pulsation when the heart is tense." Every time you see the test of experiment.

He shows further that at the moment when the heart contracts the arteries dilate and the pulse is felt; when the left ventricle ceases to contract, the pulse ceases; when an artery is dilated the jet of blood

corresponds to the systole of the ventricle; when the systole of the ventricle becomes weak, the pulse is weak; when the right ventricle contracts there is a pulse in the pulmonary artery. He calls upon pathology to speak in his favor as when (in another publication*) he adduces a post-mortem which revealed the descending aorta "converted into a bony tube." Yet during life the pulse had been felt beyond in the legs and feet, an impossibility if the pulse were an active dilation propagated along the arteries. The pulse he clearly demonstrates by many experiments is due to the impulse of the blood thrown violently from the left ventricle. And again by the power of observed fact he has bowled over an ancient error—that the pulse was independent of the heart. If one admits the passive nature of the pulse and its dependence on the heart, the circulation cannot be doubted.

Next he studies the motion of the auricles, and states that the right and left auricles contract simultaneously, followed by the right and left ventricles contracting also simultaneously; not four motions, distinct in time and place, as had been previously claimed.

Many arguments and experiments are brought forward to prove the passage of the blood from the veins to the arteries through the pulmonary vessels. In animals without lungs he notes that the blood is passed directly from vein to artery by the heart. It must be the same in higher animals, and the only path is through the lungs. The arrangement of valves favors this idea and renders it the only possible one. The pulse in the pulmonary artery, and the lack of it in the pulmonary vein, show that the former is really an artery and the latter really a vein. And the pulse in the former shows that blood is thrown into it by the right ventricle.

It is often stated that Harvey did not use the method of artificial injection to prove his theory. It is true he makes no mention of such experiments in his first book on the subject. But I find in a letter of his, written some years later to Paul Slegel of Hamburg, that he actually did such experiments. He states that if the pulmonary artery be tied and water forcibly injected into the right heart through a tube tied in the vena cava, not a drop escapes from a hole previously made in the left ventricle, though the right auricle and ventricle swell enormously. On the contrary, if the injection be made into the pulmonary artery, water gushes forth from the left ventricle in a great stream that leaves no doubt that a free passage exists through the lungs.

Next comes a chapter which has been praised by every critic, wherein Harvey introduces the quantitative method, universally acknowledged now-a-days as the highest type of observational inquiry. He measures as nearly as possible the amount of blood sent from the right to the left side of the heart at each beat, and then argues that if you admit only a small fraction of his estimate, in the course of an hour the quantity is

*Second Disquisition to John Riolan.

enormous, and there must be some way for it to return, and it must be constantly finding its way from the arteries to the veins. "I began to think," to use his oft quoted words, "whether there might be motion, as it were, in a circle." And he argues that the path of return must be by pores or minute anastomoses in all parts of the body. Remember that this was before the microscope was invented and the capillaries discovered; that no one before had considered that any considerable quantity of blood passed from the veins to the arteries or *vice versa*, and you begin to get a faint conception of the revolution which Harvey's publication must have wrought in the fixed ideas of his age.

Some of Harvey's methods of estimating the amount of blood passing through the arteries are extremely ingenious. For example, bind the arm with a moderately tight bandage, the veins are closed but the arteries open, and the arm becomes gorged with blood. Now, cool the arm in snow and then remove the bandage. You can feel the cool blood pouring instantly back to the heart, showing how rapid is the exchange.

The proposition of the return or systemic circulation, he proceeds to strengthen by many experiments and arguments. The facts of tight and medium ligatures on the limbs—facts more familiar in that blood-letting era than now—are used in a masterly way, which we cannot go into for lack of time. Furthermore, the valves of the veins to which Harvey's old master, Fabricius, had given so much attention, are, by the former, made an irrefutable argument for his theory.

Some of Harvey's experiments seem at first sight absolutely ludicrous to us, as, when he commands us to draw two similar cups of blood, one from an artery, the other from a vein. Let these stand, he says, and they behave exactly alike. Both coagulate and press out serum. The arterial blood does not shrink as it would if some kind of "spirits" escaped from it. Moreover, he commands, if you think arterial blood contains spirits, draw it under oil or water. You will not see any bubbles or spirits escape. Such experiments, trivial as they seem, were necessary to combat the idea that arterial blood was totally different from venous blood, being subtile, attenuated and spiritous—a kind of foam—and, therefore, that no commingling or circulation was possible. By such experiments, moreover, Harvey unwittingly undermined the whole doctrine of spirits and started the downfall of vitalism.

Finally, it is easy to see from this book and from Harvey's other writings on the subject, how many previously inexplicable phenomena had become as clear to Harvey as they are now to us, and by the same powerful illumination—the knowledge of the circulation. He saw and mentions numerous applications of his discovery to pathology and medicine—to name but one, the spread of contagion from a seat of injury—but he reserves the discussion of most of these for a future work on "Medical Observation," which unfortunately was destined never to be

published, the manuscript being destroyed at the sacking of Harvey's house during the war between Parliament and Charles I.

The publication of Harvey's work aroused a storm of protest and denunciation. He was called names in comparison with which our term of "crank" is mild as milk. His practice fell away, and many of his fellow-physicians did their best to overthrow him. It is stated that no doctor over forty years of age at that time ever accepted Harvey's theory. Then, as now, it was the young men who accepted the new ideas. Then, as now, was demonstrated that death is the highest agent of progress, removing from the field the old and unbendable, the conservative and slothful, and placing at the plow the young, adaptable, progressive and active.

The conflict that followed the publication of the "circulation" was much like that which came after Darwin's "Origin of Species." And Harvey found his Huxley in the great Descartes. Others also took up the fight, and honor soon followed where opprobrium had been meted out. In fact, before Harvey's death he had the satisfaction of seeing his ideas adopted in most of the universities of Europe, a recognition which comes all too seldom during the life-time of great men.

In 1661, four years after Harvey's death, Malpighi (with the newly-invented compound microscope) saw the capillaries and the passage of blood from arteries to veins. Thus the last support of Harvey's opponents was knocked away.

So far as I have been able to find out, no one in Harvey's time, either of his friends or enemies, denied him the credit of originality in the theory of circulation. In later times, however, just as in Darwin's case, all sorts of efforts have been made to claim the honors for others. In Spain you will find a monument to Servetus, describing him as the discoverer of the circulation. In Italy a memorial inscription as easily and generously gives the credit to Cæsalpinus. Nor are these the only ones who have been awakened from their long sleep to receive a deathless honor.

I have not examined the original writing of these scientists, but so far as I can gather from partial translations and from the criticism of those who have exhaustively studied the matter, not one of all those for whom claims are made had any idea of "a motion in a circle," as Harvey so simply and perfectly expresses it. They all spoke on the motion of the blood; but that conception is as old as Homer. Some of them even used the word "circulation;" but it was in the sense of mixture, as a swarm of bees circulates or the air of a room circulates. That they never arrived at the correct conception is proven by the always repeated comparison of the motion of the blood to the ebb and flow of the tide, and the constant claim of an active diastole of the arteries. Some of them thought the communication from right to left ventricle to be through the lungs; but they had no conception of the quantity of blood

that passed. A few drops of venous blood mixed with vital spirits were supposed to wonderfully expand, as it were, into foam, as they became filled with vital spirits. Hence only a little blood need go from veins to arteries. Consequently no one saw the necessity of a means of getting it back to the venous system again. And while some believed that blood might sometimes percolate from arteries to veins (indeed the notion dates back to Galen), yet it was as likely to pass in the opposite direction. No one hit the brilliant idea of a continual flow in one direction. Before William Harvey no one conceived the *circulation*. This glorious child of the scientific imagination is his, and the credit of adequate demonstration is his.

Of Harvey's life after the publication of his first and greatest work I need say little. He was physician to Charles I.; and we wish that instead of following the king in his wars and accompanying noblemen on their foreign tours, Harvey had continued his scientific work under favorable conditions. Still he was never idle nor did he enter the intense political struggle going on in England. He was physician to the king, not his partizan. Even on his journeys, and during his long absence from London with Charles; and even in the crises of the civil war he continued the accumulation of material for his last work, that on generation.

After the defeat of the king in 1646 Harvey returned to London and lived thereafter a quiet life. But, though he was then nearly seventy, his industry and intellect were undiminished. His second great book, "On the Generation of Animals,"* was published in 1651. Into this work we must not go, more than to say that he maintains strongly that no life arises spontaneously, a doctrine mightily combatted for many years, and only in the last century solidly established and made the basis of the science of bacteriology.

In 1654 he was elected president of the College of Physicians, but refused on account of age and poor health. He continued to give his lectures, however, until he was very old. He contributed liberally, moreover, to the college, erecting a building, giving books and funds to the library and endowing the Harvey Lectureship, which is continued to this day.

He died in 1657, in his eightieth year. His remains were taken to Hempstead, in Essex, and placed in a vault belonging to his brother. In 1883, this vault having fallen into decay, they were reinterred in a marble sarcophagus, with ceremonies in which the entire College of Physicians took part.

Of Harvey's character, I cannot do better than quote again from Professor Huxley: "There have been great men whose personality one would gladly forget; brilliant capacities besmirched with the stain of inordinate ambition, or vanity, or avarice; or soiled by worse vices; or

* De Generatione Animalium; London, 1651.

men of one idea, unable to look beyond the circle of their own pursuits. But no such flaw as any of these defaces the fair fame of William Harvey." For my own part, in reading his works I have been struck again and again with his generosity and courtesy to opponents. In his deed of gift to the College of Physicians he exhorts the Fellows, "For the honor of the profession to continue in mutual love and affection among themselves"—a sermon which he constantly exemplified in his own life.

Let me dwell for a moment on certain phases of Harvey's methods of work as a scientist which have particularly impressed me. In the first place, we are struck with his ability to observe correctly. Probably there is no series of motions more difficult of correct observation than the beat of the heart. Throughout the thousands of years that men had slaughtered animals, and augurs had prophesied from freshly exposed viscera, and physicians had dissected, sometimes even the living man, not one had correctly described the motions of the heart. William Harvey did.

Secondly, nothing could drive him from the evidence of his senses; not the authority of the ancients, nor the logic of famous contemporaries, nor the ridicule of the vulgar. In his day, much more than now, dialectics was the method of science. Men attempted to reason out the laws of the universe from preconceived notions. Harvey also argues his case in a masterly manner, but says: "Now this, my conclusion, is true and necessary, if my premises be true; but that these are either true or false, our senses must inform us, not our reason—ocular inspection, not any process of the mind." The contrast between Harvey's work, based on observation, and that of his opponents, based chiefly on authority and reason, shows better than anything else how much Harvey was ahead of his time.

Let me quote again to show how he had risen above the slavery to authority which overwhelmed the medical profession of his day: "Whoever, therefore, sets himself in opposition to the circulation, because, if it be acknowledged, he cannot account for a variety of medical problems * * * ; or who will not see that the precepts he has received from his teachers are false; or who thinks it unseemly to give up accredited opinions; or who regards it as in some sort criminal to call in question doctrines that have descended through a long succession of ages, and carry the authority of the ancients;—to all of these I reply: that the facts cognizable by the senses wait upon no opinions, and that the works of nature bow to no antiquity; for, indeed, there is nothing either more ancient or of higher authority than nature."

A third thing which naturally strikes with great force one trained under that masterly worker on the fundamental questions of life phenomena, Professor Jacques Loeb, is Harvey's constant use of the lower forms of animal life. There one ever finds the problems simpler, the

perturbations and disturbances less, the answer easier of attainment. Why one should choose the shrimp or insect or frog instead of man as an object of study creates ridicule to-day, as it did in Harvey's time, and cannot be answered better, perhaps, than in his pious words: "The great and Almighty Father is sometimes more visible in His lesser and, to the eye, least considerable works." In another place he says his discovery would have been made long before if men had given to comparative anatomy the same attention and zeal as to human anatomy.

Fourthly, let me mention Harvey's consistent use of the method of vivisection, a method not invented by him, but one in which his surgical skill and his trained ability as an observer made him pre-eminent. To my mind it cannot be successfully controverted that vivisection is the fundamental method on which medical progress depends. And it is a matter discreditable to the race that a mawkish sentimentality in command of the law-making power would to-day in all probability prevent in England such a discovery as that which Harvey made.

I promised to deal with the debt of Medicine to Harvey's discovery. But, really, there is no need. He who runs may read. The circulation is the central column that supports the whole temple of physiology. Without it no understanding of the preparation and distribution of food, or the removal of waste, or the interaction and dependence of organs, or the wonderful subject of internal secretion, would be at all possible. Modern astronomy rests on the Copernican theory of the solar system. Not less firmly is physiology based on the circulation of the blood.

In pathology, think only of two subjects—metastases and inflammation—and attempt to explain them without the aid of the circulation! Or consider current doctrines of infection, intoxications, immunity! Or attempt diagnosis or treatment, or prognosis! The circulation usually, if not always, is the pole toward which your guiding compass turns. I quote the words of T. Lauder Brunton: "How very minute is the gemmule from which has sprung everything that is definite in medicine, for this gemmule is no other than the idea which Harvey records in these simple words: 'I began to think whether there might not be motion as it were, in a circle.'"

More important, even, than all this constructive work is, perhaps, the influence of Harvey's discovery in effecting the downfall of the doctrine of spirits. Previous to him physiology, more than any other science, was dominated by dogma. But after Harvey's work and the advent of the new chemistry a little later, more rational views of life processes in health and disease became possible; and progress inevitably became faster as the grinding brake of vitalism was loosened.

Not only has Harvey's discovery been the inspiration of scientists and historians, but also of poets as well. And I cannot do better than close with Cowley's ode:

"Thus Harvey sought for truth in truth's own book—
 Creation—which by God himself was writ;
 And wisely thought 'twas fit
 Not to read comments only upon it,
 But on th' original itself to look.
 Methinks in Art's great circle others stand
 Lock'd up together hand in hand:
 Everyone leads as he is led,
 The same bare path they tread,
 A dance like that of Fairies, a fantastic round,
 With neither change of motion nor of ground.
 Had Harvey to this road confined his wit,
 His noble circle of the blood had been untrodded yet."

REFERENCES.

- Willis: *The Works of William Harvey*, London, 1847.
 Power: *William Harvey*; in *Masters of Medicine* series, London, 1897.
 Foster: *Lectures on the History of Physiology*, Cambridge, 1901.
 A useful list of further references follows the article on Harvey in the *Encyclopedia Britannica*. A large number of magazine articles on various phases of Harvey's work is available through *Poole's Index*. For the most part these articles seem to be founded on Willis' book. Professor Huxley; however, in the *Fortnightly*, vol. 29, p. 164, treats the subject with his usual lucidity and originality. See also Huxley, *Proceed. Roy. inst. Gr. Brit.*, 1878, vol. viii, p. 485.

EDITORIAL COMMENT.

THE MEDICAL SOCIETY.

The medical society in a large community is an important element in the medical life of that community. Its influence for good has been insisted upon by all medical writers who have given the subject any attention. Notably Osler has again and again emphasized its value both to the individual and towards strengthening the position which medicine occupies in a given community. It is apparent that a society, especially under the new conditions set forth by the American Medical Association, serves the interest of medicine in many other ways than purely medically. In other words, there has come about a sharp distinction between the society as a representative body having the interests of medicine at stake in what may be called its civic side, and the society as a body of men whose aim it is to advance medicine as a science. It is almost impossible to conceive of a society as large as this one has become, to do both equally well and to serve both ends judiciously.

With the increasing demand for more careful work in medicine, it might be pertinent to inquire how far a local society is capable of meeting and fostering this demand. If the programme of a year's work in the local society be studied, taking this as an average body, it will be found that a surprisingly small number of papers are read which even suggest that there has been a sustained effort towards the investigation of the problem presented or even a broad appreciation of the work done in other places.

The great majority of papers consist of case reports, generally statistical in character, or of the narration of single rare experiences in clinical medicine.

It may be suggested that the character of the paper presented is a measure of the intelligence of the audience before which it is read. Papers of the other sort would be presented if there were a reasonable demand for them; or another explanation might be advanced, namely, that no other papers are read because there are none produced here. Both these assumptions are wrong, and the fact remains that there is an audience prepared to hear the best that can be produced and that there are a sufficient number of men who can produce them. The fault lies rather in the character of the gathering which, in the very nature of things, a society like the local one, or any other local one, brings together.

A local society is cumbersome in its organization, and its activity at any one meeting may be largely used up in the discussion of what, for the lack of a better name, may be termed medical politics. No invidious

meaning attaches to this term. It simply refers to the sum of a medical society's activities not associated with the presentation and the discussion of purely medical subjects. As the society grows in numbers it will become more and more difficult to simplify its organization in such a manner that the business of the practical side of its activity can be side-tracked for the time necessary for its other functions. There is in a city of this size a score or more of men engaged upon research into the biologic side of medicine; there are many others who are working upon the clinical laboratory questions, and for all of these there has been wanting a well-recognized medical audience to serve as critics of their work. In the attempts that have been made to present papers embodying this sort of work before the large general society there has been the discouraging features of small, very small, attendance and the lack of intelligent discussion. A handful of politely bored or mildly interested physicians is, to say the least, not a stimulating audience for any one.

A solution for the present unsatisfactory state of things is a real necessity. It probably lies in the effort to establish small societies of various specialties and a society limited in numbers, where the clinical man with interests not wholly limited to cases as such, and the laboratory worker, meet on the common ground of what may be called the biological side of medicine, that is, of medicine considered as a part of biology.

Such societies are an important feature of medical life in other cities, and have become very active in their influence upon the larger society. Through societies of this sort, and other more special ones, the education of a larger audience is brought about and a taste for a better product is awakened which cannot fail in time to produce the same kind of effect upon the more general society.

It may possibly come about that the local society may find means to limit its business side to special meetings, and that the best of the activities of other societies be presented before it in such a way that it will arouse the interest of a larger audience, at present dormant for lack of stimulation.

THE SYPHILIS-SPIROCHÆTE.

The discovery of Schaudinn, published in the beginning of this year, of the constant presence of a characteristic form of spirochæte in syphilitic lesions, has given rise to an enormous amount of control investigations. The latter, following the path described by the discoverer, are remarkable for the uniformity of their results, a fact which permits us to conclude that the future, if no new views are opened, will only confirm the results obtained. At the same time it is appropriate to discuss the conclusions that can be drawn from a general confirmation of Schaudinn's work, based on investigations already carried out.

As is well known, this work has demonstrated that a peculiar protozoic organism is to be found in every syphilitic lesion of the primary and secondary stage of the disease in man and in the monkey, as well as in the blood and the spleen, and in congenital syphilis in almost all organs. This organism is a spirochæte of very characteristic size and shape and comparatively easily differentiated by these from other members of this group, which in the same and other lesions are known to occur as saprophytes. This point is now a fact and negative reports for different reasons cannot be objections. For causes at present unknown the number of organisms demonstrable is mostly very small, only exceptionally large. As the demonstration is very difficult and tedious, a negative finding ought always to be suspected. The differentiation as yet is only morphologic; it is easily achieved if familiarity with the shape, size and staining qualities of the spirochæte obtains. In spite of contradictory reports this spirochæte has not been found anywhere else; it has never been found in tertiary processes. ♣

This is all we know for the present. Can we draw any conclusions from this knowledge? Some enthusiasts have formed the opinion that the etiology of syphilis is established by this discovery. It would be futile to deny that such a thought lies at the bottom of the tremendous amount of labor devoted to the study of this spirochæte. Nevertheless, the opinion that it is the etiological factor of syphilis has found but few adherents. The general trend of thought is not of hesitation, but of wise precaution. During the past twenty years the constant finding of a microbe in a specific disease has led investigators to associate that microbe with the causation, or better the etiology of the disease. Latterly this association of cause and effect has met with several serious rebukes, the most recent one being the discarding of the hog cholera bacillus, heretofore reigning supreme, and its replacement by an ultramicroscopic virus. The assumption cannot be condemned today that in other diseases also, the etiology of which we have been proud to pronounce fully established, the future will bring changes and alterations or additions; such probabilities, for instance, have been suggested lately for diphtheritic infections. The constant finding of a specific micro-organism in a specific infectious disease can be at the best but suggestive, never a proof. The suggestiveness, however, of this observation is very great. What has been done is only a preliminary step. Methods for experimentation must be invented to prove that the suggestion is right or wrong.

Many difficulties surround the problem. Spirochæte, to which group also belongs the organism of recurring fever, is not a bacterium but a protozoon. As studied in animal diseases, the spirochætæ show a very complicated cycle of development. Of Schaudinn's spirochæte we only know the spirillum stage; of other stages we have but vague and indefinite inklings. Until this is worked out and until the relation of each stage to the pathologic stages caused by it is established, we can make no

progress. At present we have no idea of the relation of the spirochæte to the tissue-elements between and perhaps in which it is found. We can only demonstrate it in the exudates and pressed out tissue-fluids. Above all we have to deal with an organism which, even in its spiral form, offers great difficulties to its recognition. Koch's laws to establish its specificity are far out of reach today—no spirochæte has ever been cultivated. In fact to one familiar with modern methods of biologic research, no feasible way suggests itself. Herein lies the great importance of Schaudinn's discovery, for the difficulties obtaining and the essential importance of the goal to be reached will act as a stimulus to efforts to solve the problem, to find new ways and methods to make accessible to direct interference one of the most serious plagues of mankind.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

A Severe Form of Chronic Spasm of the Colon.—SCHUETZ (*Archiv. fuer Verdauungskrankheiten*, Pt. 4, Vol. XI), reports three unusual cases of contraction of the colon in young women. The attacks were unlike the ordinary spastic condition of the colon in neurasthenic conditions, and similar ones, it seems, have not been reported in the literature. The trouble is characterized by very severe attacks of colic in the course of the colon, and especially in the left half of the abdomen. The colon was often palpable as a hard strand throughout its length and exceedingly sensitive to pressure. In two of the cases there had been recurring attacks for several years, and in one case a diagnosis of appendicitis was made. The appendix, however, was found in a perfectly sound state, in spite of the fact that a hard mass had been palpated in the cæcal region.

The author lays great stress upon the differential diagnosis, showing how readily the cases may be taken for lesions of the intestines, *tabes incipiens*, colitis and sigmoiditis, etc.

Skiagraphy of the Stomach and Intestines.—HULST (*Physician and Surgeon*, September, 1905) made careful x-ray examinations of the stomach and intestines in a series of cases, and presents in this article the skiagraphs. He lays much stress upon the technique in the use of the x-rays, and shows how greatly the results may vary with slight manipulation, differences in position, etc. His pictures of the normal colon and stomach, semi-distended with milk and bismuth, vary greatly from the descriptions in text-books on anatomy. He thinks that the current conception of the size, shape and position of the normal stomach is bound to be modified in the future. He maintains that the patient should be skiagraphed in standing or sitting positions and that the reclining position gives false results. He recommends, further, that the anticathode should be not less than twenty inches from the plate, that the skiagraph be interpreted according to the laws of projection, that the source of light be centered, that short exposures be taken on account of the peristalsis. In these cases the patients were given meals including large amounts of bismuth. The first picture taken immediately after the meal indicates the position of the stomach; the second picture, taken four to six hours later, determines the relative length of time needed for the stomach to empty itself of the bismuth, and a third picture is taken from ten to twelve hours after the digestion of the meal, to determine the location of the colon. He finds the cecum more of a receptacle than the stomach, judging by the length of time the bismuth

remains in it. The jejunum, true to its name, is always empty—the normal state. The ileum always contains some bismuth while the cecum is filling.

An Unusual Case of Gastric Tetany.—EDENHINZEN (*Archiv fuer Verdauungskrankheiten*, Pt. 4, Vol. XL.) recites a case in which attacks of tetany were provoked by a gastric disturbance, yet in which there was much doubt as to whether the mild gastric trouble was the primary cause of the attacks. The paroxysms could also be called forth by special psychic influences, the patient being a profound neurasthenic. The attacks were primarily typical tetany attacks, but afterwards evolved into pseudotetany on the basis of neurasthenia. As for the cause of tetany, the author is not entirely clear as to which theory to apply to this case. The theory of autointoxication could hardly be applied here, inasmuch as there was no gastric retention.

A Clinical and Laboratory Study of the Therapeutic Value of Hydrochloric Acid—Diseases of the Stomach.—CHASE (*Boston Medical and Surgical Journal*, September 14, 1905,) presents a review of the literature on the subject of hydrochloric acid in diseases of the stomach, and the results of his own observations, based upon clinical and laboratory studies. He has noted (1) the immediate effect of large doses of HCl upon the acidity of gastric contents, (2) effects of large doses of HCl given after a large meal, (3) the effect of long-continued use of large doses of HCl upon gastric secretion and (4) the effect of large doses of HCl upon peptic digestion. The sum and substance of the literature and of his experiments yields but little in favor of the use of large doses of HCl, and some evidence that such employment of the acid may be harmful. He believes that the use of small doses often results in the alleviation of certain symptoms, but questions if it ever improves any function of the stomach. It is chiefly from the nervous gastric disorders that favorable results come from the empirical use of the acid. This test, however, is not a correct one by which to judge the therapeutic value of hydrochloric acid, for the acid is not indicated in such cases.

Acute Dilatation of the Stomach.—NECK (*Centralblatt fuer die Grenzgebiete der Medizin u. Chirurgie*, No. 14 and 15, Vol. viii) presents an exhaustive review of the literature on acute dilatation of the stomach, a condition which he describes as a sudden distention and disturbance of the functional energy of the stomach, with stormy symptoms, arising in a case in which no marked disturbance previously existed. The subject matter is a careful review of the results of autopsies, experiments and clinical observations, presenting some fifty literature references.

Cholecystitis Typhosa.—DOERR (*Wiener Klinische Wochenschrift*, No. 34, 1905) conducted an interesting series of experiments on animals with reference to the disposition of typhoid and other bacilli in the bile. The experiments were prompted by the observation of a case of empyema of the gall bladder on the basis of an old cholelithiasis. The patient had had typhoid fever, and the pus as well as the nuclei of the numerous gallstones contained typhoid bacilli in pure culture.

The results of the author's experiments show that living bacteria injected into the blood vessels soon find their way into the gall bladder (within eight hours or less). Those injected into the peritoneum, skin or stomach do not appear in the bile. Typhoid, paratyphoid, coli and dysentery bacilli develop and grow in the bile, and can be demonstrated there in large numbers as late as four months, long after they have disappeared from the blood, bone marrow, urine and the liver. The typhoid bacilli injected intravenously in the rabbit produce a purulent though transitory inflammation of the mucous membrane in the gall bladder. The growth of the germs in the bile does not tend to prolong the agglutinating qualities of the blood originally produced by the injections. This tendency disappears soon after the discontinuance of the subcutaneous or intravenous injections. From time to time the bacteria are expelled with the bile and may be demonstrated in the feces. Antiseptics, whether injected or taken intravenously, seem to exert no influence over the bacteria in the bile.

The Constant Presence of the Spirochæta Pallida in Syphilitic Tissues of Man and Monkey.—KRAUS and PRANTSCHOFF (*Wiener Klinische Wochenschrift*, No. 37, 1905), find that the spirochæta pallida does not occur in the healthy tissues of the human being and monkey, nor in tissues affected by other than syphilitic processes. On the other hand it is constantly present in the lesions and products of syphilis. In view of these constant findings, and the fact that it is also found in lesions experimentally produced in the monkey, the authors conclude with a great degree of certainty that the spirochæta pallida is the cause of syphilis.

The Relation of Pleurisy to Tuberculosis.—VON RUCK (*N. Y. Med. J.*, September 30, 1905).—Formerly the pleural cavities were regarded as exceedingly well protected against localization of bacteria, not only because of the protection afforded by the chest wall but because the lymphatic system of the lungs was supposed to carry centripetally away from the pleura everything otherwise liable to reach it. More recent investigations and clinical observations lead to opposite conclusions. After weighing the data at hand the author concludes that the pleural cavities are readily accessible to bacterial invasion, and that the great majority of pleurisies with effusion are due to infection with tubercle bacilli. This is proved by autopsy findings, methods of exact diagnosis and subsequent clinical histories. The so-called idiopathic dry pleurisies are likewise usually tuberculous.

The subjective symptoms of inflammation of the pleural apices often simulate those of myalgia or rheumatism.

Tuberculosis should be suspected in every case of pleurisy or persistent pain in the chest or shoulder which cannot be ascribed to other causes, and if the physical examination proves negative, the patient should be regarded as tuberculous, and should be kept under careful observation. The tuberculin test may be relied upon to confirm or exclude the tuberculous nature of pleurisy in case of doubt.

The application of these principles will lead to an earlier recognition of tuberculous disease of the lungs, and to the institution of a treatment at a period which will in many cases secure to the patient most important advantages in his prospects for recovery.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

Chronic Ulcer of the Stomach and First Portion of the Duodenum.—WILLIAM J. MAYO (*Journal American Med. Association*, October 21, 1905).—We have in this article the most valuable single contribution to the treatment of this subject. Dr. Mayo, in a most discriminating manner, exhausted the material of the Rochester clinic in this paper. He shows in addition by statistics that post-mortem examinations and earlier clinical studies have not given us by any means a correct idea of the frequency of these lesions or of their numerical relation to one another. He and Dr. C. H. Mayo have operated nearly eight hundred times for stomach and duodenal disease, consequently there is no question as to their authority to speak on this matter. During the last two and one-half years they have done gastro-enterostomy 231 times for ulcer and found sixty of these in the duodenum alone, while fourteen involved both duodenum and stomach. Older authors will no doubt be astonished to find that so large a number of these lesions affected the duodenum. What seems of the greatest value to us in this article, remembering how vast the author's experience has been, are his conclusions regarding the definite results. He impresses as firmly as possible that nothing is to be expected from operations upon nervous individuals with gastric neuroses and almost equally little from operations upon those who are the subject of atonic dilatations merely. The author's experience has convinced him that the patients who have some actual mechanical hindrance to the passage of food over the pylorus, the result of ulcer, are those who profit by gastro-enterostomy. He does not operate in case of an acute ulcer unless a complication such as perforation, hemorrhage, etc., influences him to use radical measures, but does accomplish the greatest good in those chronic cases with frequent relapses. The history of gastric surgery is about five years old, and the best of it not more than two years old; hence one cannot expect much reliable information from the older books and, the author is sorry to state, from modern books on internal medicine. The Mayo mortality has been less than 3 per cent. in the last 150 suture gastro-enterostomies. They make the opening behind as low as possible and with a short intestinal loop. Past disappointments have been due largely to faulty technique and thus failing to secure good stomach drainage, but the future ought to see nothing of this kind. It is interesting to note that these patients came from twenty-six states and Canada, less than 20 per cent. belonging in Minnesota.

The Permanent Results of the Operative Treatment of Basedow's Disease.—FRIEDHEIM (*Arch. f. Klin. Chir.* Band 77, Heft 4).—This article comes from Dr. Kummell's division at Hamburg, where twenty cases were treated by partial removal of the thyroid gland. The results, both temporary and permanent, were so good that the author was thus in-

spired to investigate the experience of other large German clinics with the following results: Up to 1900 Rehn had a mortality of 21.1 per cent. with 50 per cent. of cures. However, in the twenty cases under especial consideration there was a mortality of only 5 per cent. with 70 per cent. of cures. This shows conclusively that the technique of surgery is gradually but surely improving. It is very interesting to note that the author states that Mikulicz with eighteen cases had ten cures and one death. Kroenlein operated on twenty-four cases, of which two resulted fatally; sixteen were cured. The largest number of cases, as may be naturally supposed, were operated upon by Kocher, namely, fifty-nine. Of these forty-five were cured and four died. Koenig had but eight cases, of which four were cured and one died. From all the statistics at his command the author is able to state that there is practically no medical treatment which will result in a cure of the disease, while if left alone about 12 per cent. of these patients die; consequently we have even a stronger reason than would otherwise be the case, for operating upon patients who do not spontaneously recover.

A New Procedure Common to Gastrostomy and Jejunostomy.—ACRE (*Revue de Chir.*, September, 1905).—As the author rightly states, there are two requirements in making these operations which must be met. The first is that liquid food pass in easily and not regurgitate; the second is that there be no escape of bile or pancreatic fluid. The proposed operation is as follows: (1) Laparotomy where it may seem most desirable. (2) Grasp desired viscus and bring it to the surface. (3) Suture visceral and peritoneal surface, together, making the jejunum cross the wound from left to right. (4) Closure of the abdominal wound excepting a small space which allows a view of the intestinal wall large enough to admit a small catheter. (5) Twenty-four hours later the intestine is opened, the catheter is introduced and food nourishment poured in through it, the point of the instrument being 8 cm. to 10 cm. deep and inclined to the right if the gut is used. If only 200 cc. to 300 cc. have been introduced, and this is not done oftener than every two or three hours, a perfect functional result will be obtained.

Clinical Observations in Glycosuria After Ether Narcosis.—ROEHRICHT (*Zentralbl. f. Chir.*, September 23, 1905).—In order to get at the results which he publishes, the author examined for sugar the urine of one hundred patients after ether narcosis. Of these, fifty-three were men. Twelve patients, eight of them men, showed a glycosuria, and the largest amount of sugar excreted by any one was 1 per cent. The author does not claim to draw any very definite conclusion from so modest a number of patients, but it does seem to him as if advancing age predisposes to this anomaly. He tried to see if there was any relationship between trauma and glycosuria in these cases, but none was apparent. We have long known that this phenomenon appeared after chloroform narcosis, but it is interesting to note that the same thing may in less degree be expected after ether.

The Surgical Treatment of Non-Cancerous Affections of the Stomach.—MAYO-ROBSON (*Gazette des Hôpitaux*, September 23, 1905, the First International Congress of Surgery, Brussels, 18-23 of September, 1905.)—The author has done almost five hundred stomach operations, and has seen a large number of these patients who were not operated upon. He is therefore in a position to judge of the relative value of surgical and medical treatment of these cases. He has made it his study to observe the remote results of such operations, consequently his conclusions are of far more than ordinary value. The operative mortality where a gastro-enterostomy is done for ulcer of the stomach is very small. He had one series of seventy-seven cases in which not one was lost. In his entire list of these operations the mortality has been 3.7 per cent. There should be no complications, such as vomiting, vicious circle, etc., if the operation is properly done. The remote results, where there is pyloric contraction and resulting dilatation of the stomach, are satisfactory, but those cases of atonic dilatation are not improved. In the case of hemorrhage, it is usually not necessary to search out the bleeding point or to excise the ulcer, a gastro-enterostomy putting the viscus at rest does all that could be desired. In the treatment of chronic ulcer by these means 92 per cent. of cures have been obtained at the author's hands. He does not consider that pyloroplasty is of permanent good, although it may give very satisfactory immediate results. Finney's operation is a brilliant conception, although its performance is too recent for definite conclusions. The mortality of cases which are not operated upon can be generally construed as being about 25 per cent. The author gives preference to the posterior operation: he makes the opening as low as possible and uses the short loop. He uses a suture method around his bone bobbin. One is struck in comparing the article of Mayo in America with that of Robson in England, by the fact that the two greatest English-speaking specialists on this subject have arrived at almost identical conclusions.

The Operative Treatment of Purulent Meningitis.—KUMMELL (*Archiv f. Klin. Chir.*, Bnd. 77, Hft. 4).—The author goes so far as to say that he will in future, in epidemic cerebro-spinal meningitis, when the lumbar puncture does not relieve the condition, make an extensive opening of the subdural spaces of the head. We have long become a unit in thus treating similar infections the result of ear disease. No one now hesitates to open them and drain them widely. Eight out of twelve such cases are on record in literature as being completely cured. The author reports a case of purulent meningitis after basal fracture in which operation saved the patient's life, even after lumbar puncture had demonstrated the presence of pus. In one day the patient was very much better and went on satisfactorily to complete recovery. This was a diffuse meningitis, although, of course, it cannot be classed as one of the epidemic variety. Still, the author feels justified in concluding that a similar result might be obtained in this other most dreaded class of cases. It may be necessary to open either spinal canal or the cranial cavity or possibly both.

The McGraw Ligature.—A. J. OCHSNER (*Journal Am. Medical Association*, October 21, 1905).—This author has more than any other one surgeon brought the McGraw ligature into prominence. He has used the method 156 times and concludes that it accomplishes its purpose in a satisfactory way, that the opening can be made any desired size, that the risk of infection to the peritoneum is greatly lessened, that it can be done quickly, that it requires no special skill or ingenuity. The patients show very little shock after such an operation. They are relatively free from pain and can sit up in bed with a head-rest a few hours after operation. The method should not be employed, however, in making a pyloroplasty or in making a cholecystenterostomy. Several steps which Dr. Ochsner has formulated will be of great use in guiding those unfamiliar with this operation. (1) A round rubber cord 2 mm. in diameter should be used. (2) A posterior row of Lembert sutures is placed. (3) A long straight needle armed with a rubber cord is passed into the lumen of the intestine and out again at the desired distance, *i. e.*, from 5 to 10 cm. away from the point of introduction. (4) With the rubber stretched thin it is drawn through the intestine. (5) The same is repeated in the stomach. (6) A silk ligature is laid under the point where the ends of the rubber cross. (7) A single tie is made in the rubber ligature. (8) The silk is tied over the rubber knot. (9) The rubber ends are released and cut off. (10) The Lembert suture is continued around in front of the ligature. (11) Care must be taken not to tie the ligature behind the posterior row of Lembert sutures. Of 124 operations done in one hospital, five patients died, but these were all greatly reduced by disease and died of exhaustion. In some of them the most complicated multiple operations were performed. Dr. Ochsner is evidently enthusiastic over the method and one must be impressed by the opinion of so well known a judge of surgical technique.

DIAGNOSIS.

IN CHARGE OF

A. E. TAUSSIG, M. D.

The Detection of Acet-acetic Acid in the Urine.—L. LINDEMANN (*Muench. med. Wochenschr.*, 1905, No. 29).—In the March number of this journal, we described a new test for acet-acetic acid in the urine, according to Riegler. To 15 cc. urine, 2 cc. of a 10 per cent. solution of hydriodic acid are added, the mixture then being shaken with a little chloroform. In the presence of acet-acetic acid, the chloroform remains colorless, whereas in its absence the chloroform is stained red by the iodine set free. Hydriodic acid is used instead of iodine, because the test is reliable only if the reaction of the mixture is strongly acid. In alkaline or neutral solutions, many other substances set free iodine, whereas in acid solutions only diacetic acid will do so. Ordinarily the acidity furnished by hydriodic acid will suffice. If, however, the urine be strongly alkaline, the mixture may fail to be acid, so that the reaction may be

positive even in the absence of diacetic acid. Lindemann has modified Riegler's test so as to overcome this source of error. Acidify 10 cc. urine with five drops dilute acetic acid or enough to make it distinctly acid; then add five drops Lugol's solution (iodine 1.0, potassium iodide 2.0, water 100.0), shake and add 2 cc. chloroform. The chloroform takes on the iodine color only if diacetic acid be absent.

This modification is quite as delicate as the original test and is more trustworthy. It has, moreover, the advantage of requiring only such reagents as would be on hand in every clinical laboratory.

Pavy's Method of Determining Glucose in Urine.—SAHLI (*Deutsch. med. Wochenschr.*, 1905, No. 36).—In his text-book, Sahli has expressed himself very sceptical as to the value of Pavy's method of determining the percentage of sugar in urine. As is well known, Pavy's method differs from Fehling's in that by means of the addition of ammonia, the precipitation of cuprous oxide is prevented. The end reaction is characterized by the complete decolorization of the test fluid. Further experience with the method has now convinced Sahli that it is by far the most satisfactory one for routine glucose determination. He explains his change of opinion by stating that the trustworthiness of the method depends absolutely upon the observance of certain precautions not sufficiently emphasized by Pavy. For a discussion of the question the reader must be referred to the original article. Suffice it here to state that the precautions requisite according to Sahli are: 1. The test fluid must be sufficiently diluted with distilled water (best 1 to 4); 2. The test fluid must be kept boiling very slightly during the course of the determination, not violently, as is often done.

A New Test for Indican.—A. GURBER (*Muench. med. Wochenschr.*, 1905, No. 33).—Jaffe's test for indican has the fault that exactly the proper amount of chlorinated lime must be used. If too little be taken, not all the indican is oxidized to indigo-blue; if too much, the indigo-blue is again decolorized. Obermayer's test, in which ferric chloride is used, is much to be preferred, but is a little complicated. The writer suggests the use of osmic acid as the oxidizing agent. His test is done as follows: To a test-tube, one-third full of urine, add twice this amount of concentrated hydrochloric acid and two or three drops of a 1 per cent. solution of osmic acid. Shake well. The mixture will be colored violet, bluish violet or deep blue, according to the amount of indican present. The indigo may be extracted with chloroform as in the other tests.

Staining Urinary Sediments.—WEDERHAKE (*Muench. med. Wochenschr.*, 1905, No. 37).—Many methods have been recommended for staining the organized urinary sediments, none of which have given entire satisfaction. Most of them cause unpleasant precipitation of pigment, others stain the casts irregularly and incompletely. The writer uses a one per cent. watery solution of neutral red, which, in his hands, has given good results. The urine is centrifugated, the fluid poured off from the sediment, a drop of the neutral red is added, the tube refilled with water or saline solution and again centrifugated. The casts, pus and epithelial

cells are stained red and can be easily found and recognized, even if present in extremely small numbers.

Still better results are obtained if a double stain is used. To 20 cc. of a 1 per cent. neutral red solution add 10 drops of a saturated alcoholic solution of methyl-violet. Two or three drops of this mixture are used in the same manner as the neutral red solution. Waxy casts then stain blue, all others, as well as the cells, red. Crocein-scarlet 7 B, with a little iodine, gives even more highly differentiated pictures.

It would seem, however, that staining urinary sediments will rarely be worth while unless, indeed, the number of casts is so few that many slides must be examined rapidly. In this case a single cast is less apt to escape detection if stained than if colorless. Perhaps, where no centrifuge is at hand, and where the sediment obtained on standing is to be examined, the addition of one of the above stains will aid in the rapid finding of casts. None of them, we are told, produce precipitates of pigment.

The Detection of Albumose in the Urine.—FITTIPALDI (*Riforma med.*, 1905, No. 35).—None of the simpler tests for albumose in the urine are either very delicate or quite trustworthy. Fittipaldi suggests applying a reagent similar to that of Spiegler (which, as is well known, precipitates both albumen and albumose), to urine freed from albumen. His method is as follows: To 5 cc. urine add 5 drops of a saturated solution of trichlor-acetic acid. Boil. If this produces no precipitate, allow the mixture to stand five or six hours until a sediment forms. Then filter and add a solution of mercuric iodide in potassium iodide. In the absence of certain alkaloids, especially quinine, a precipitate indicates the presence of albumose.

The Diagnostic Puncture of the Testicles.—C. POSNER (*Berl. klin. Wochenschr.*, 1905, No. 35).—Before undertaking the treatment, operative or internal, of azoospermia, it is essential to ascertain whether the absence of spermatozoa in the semen is due to mechanical obstruction somewhere or to failure on the part of the testes to produce the male elements. For this purpose Posner advises the puncture of the testicle and aspiration of a drop of its contents. The skin is sterilized scrupulously, a hypodermic syringe with rather large needle is used, and the drop so obtained examined microscopically. The little operation is almost painless, is never followed by ill results (perfect asepsis being pre-supposed), and gives positive information regarding the secretory power of the testis. In all of his observations except one, the spermatozoa so obtained were motionless. This is in accord with the generally adopted theory that the addition of prostatic secretion to the semen is requisite for giving the spermatozoa motility. In one of his cases, however, for some unknown reason, the aspirated seminal secretion showed very active motion.

THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

Action of the Toxic Agent of Lobar Pneumonia.—BREM (*Johns Hopkins Hosp. Bull.*, October, 1905.) has based his observations on a study of the temperature, pulse, respiration, blood pressure and urinary output in a series of typical cases of lobar pneumonia, which he has divided into two groups—the mild and the severe. The action of the toxic agent in the disease he sums up in the following words:

“1. Phenomena of the mild action bear the features of stimulation of the central nervous system and cardiac muscles.

“2. Phenomena of severe intoxication appear to result from intensified stimulation, or enfeeblement and exhaustion from overstimulation.

“3. Death occurs from (1) respiratory insufficiency terminating in asphyxiation or in exhaustion of the respiratory center, or (2) circulatory insufficiency, which leads, presumably, to accumulation of the toxic agents, and which may induce edema of the lungs or end in exhaustion of the heart muscle.”

Particularly important is the point that the stimulation which results in such well-known increase in the respiratory rate actually reduces the amount of air (oxygen) which reaches the alveoli, because with increased rate the depth of respiration diminishes, the proportion between the tidal air and the capacity of the bronchial tree becomes comparatively less, so an insufficient quantity of oxygen reaches the alveoli. Overstimulation of the respiratory center may thus directly cause asphyxiation of the patient.

The ends to be accomplished by treatment are, therefore, the elimination of the toxic agent and amelioration of its harmful effects, especially control of the overstimulation of the respiratory center. The most efficient means of eliminating the toxic agent is by *internal hydrotherapy*—that is, by passing through the circulation the greatest possible quantity of fluid, in the hope that in its elimination through the kidneys as much as possible of the toxic agent will be carried out with it. This is supported by the author's observation that during the twenty-four hours preceding improvement in cases of pneumonia the urinary output is increased to a remarkable degree. A case is reported in which the patient very faithfully followed the instructions to drink water freely, and voided 25,400 cc. of urine in the twenty-four hours preceding the crisis, which occurred on the fourth day.

For the control of the overstimulated respiratory center, Brem suggests relatively large doses of heroin hydrochlorate, used hypodermically, in all cases in which the respiratory rate is 36 or more. Heroin reduces the rate from 30 to 50 per cent. and markedly deepens the individual respirations. In this respect it is more efficient than morphine, which, however, may be substituted for it in alcoholics, in which the heart usually bears heroin badly.

Oxygen inhalation, though it reduces the cyanosis and deepens the re-

spiratory movements at the time, is very evanescent in its effect, causes much restlessness and discomfort, and, if the oxygen forms a large part of the respired air, may easily produce an active bronchial inflammation.

The circulation is favorably influenced by general measures, as external hydrotherapy and the narcotics suggested for influencing respiration. Brem considers alcohol of service only in so far as it has a narcotic effect, or in alcoholic individuals. Where enfeeblement of the respiratory or circulatory apparatus has begun it is probably contraindicated.

Of actual stimulants, only such may be used as do not affect the central nervous system, in order that the overstimulation of the respiratory center may not be exaggerated. Such a stimulant is found in tincture of digitalis, which should be used when signs of a failing heart appear. It should be given in sufficient quantity—15 minims every four hours.

The summary of therapeutic measures may be quoted:

1. Elimination of the toxic agent—*internal hydrotherapy*.
2. Amelioration of harmful influence:

(a) Fever, *external hydrotherapy*; pain, *ice bags and analgesics*; restlessness, insomnia, delirium, *external hydrotherapy, analgesics and narcotics*.

(b) Respiratory indications: (1) *Heroin or morphine* every 2 hours for a respiratory rate of 36 or greater. (2) *Oxygen inhalation* is probably useless, and may be harmful.

(c) Circulatory indications: (1) Circulatory sedatives are probably contraindicated. (2) Alcohol indicated in alcoholic cases; may be of benefit when there is no circulatory insufficiency. (3) Circulatory stimulants contraindicated except members of the digitalis series. The indication is low blood pressure associated with one or more of three conditions, namely, respiratory insufficiency, small urinary output, oedema of the lungs.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

An Inquiry Into the Etiology and Pathology of Beri-Beri.—HAMILTON WRIGHT (*The Journ. of Trop. Med.*, Vol. 8, 1905).—The paper extending over four issues of the JOURNAL is an abstract of the official report of Wright, who as director of the department of medical research, Federal Malay states, has had opportunity to study the disease under the most favorable conditions. His conclusions are based on observations extending over many years, and the conditions were such that they fulfilled in some directions the exactness of experiments. Only in a few words the general results may be quoted; the details of the work will be found of the highest interest and importance for all future studies of this heretofore mystic disease. Wright's main point is the estab-

lishment of its infectious character and the entire elimination of all theories basing its etiology on toxic influences arising from different varieties of food. Wright's observation may be taken as proof that a bacterium, causing an acute infection of the gastro-duodenal portion of the intestinal tract, rarely of the intestine itself, produces a toxin leading to atrophic changes in the nerve-fibres, thus giving rise to the symptoms of the active stage of the disease. The period of inoculation was determined as short as ten days: the active stage can last from a few days to a few weeks. Patients not dying during this time represent the chronic form of the disease, that is, only the effect of the lesions set during the active stage. In tropical literature this chronic disease goes under the name of beri-beri residual paralysis. The transmission of the disease is effected by contact with the secretæ of beri-beri patients; the careful observations and statistics compiled by the author in this direction on prisoners in several large prisons evidently prove that by prevention of such a contact the disease can be easily eliminated. In judging Wright's work, the specific nature of the infecting bacillus is still somewhat hazy and a more definite working out of the life history of this organism is necessary. The merit of the work, however, lies, not in this theoretic question, but in the final determination of the infectious nature of the disease, by demonstrating the mode of infection and giving the means of preventing infection. As to tropical diseases, Wright's contribution is one of the most important recently made.

Report of Working Party No. 2, Yellow Fever Institute.—Experimental Studies in Yellow Fever and Malaria at Vera Cruz, Mexico.—M. J. ROSENAU, H. P. PARKER, E. FRANCIS, G. E. BEYER (Yellow Fever Institute, Bulletin No. 14., May, 1904).—The yellow fever epidemic of the South, now subsiding, has given rise to a number of literary medical achievements, in which the critical tendency of the writers in the attempt to be specifically scientific and logical has tried to undermine the great work that has given us the knowledge of the etiology of the disease and the means to combat and prevent it. Aside from the point that such attempts in science should not be made merely on the basis of theory in opposition to established facts, which cannot be overturned by a single contradictory fact, they have the effect practically to aggravate and to make difficult conditions that we have knowledge can be governed by the conclusions drawn from the work already done. In the late epidemic, too, there is no doubt that they have greatly increased the already great difficulties that obtained. The report quoted as the subject of these remarks cannot be welcomed too warmly as an indication of the direction in which further proofs or objections for the modern yellow fever theory ought to be obtained. Written in a plain, unadorned way, it reveals a method of investigation that we intrinsically feel is the one to be pursued to clear up doubts and to confirm or refute. In its simplicity of expression the report almost makes one forget the immense amount of work it represents, the result of which is given in its lines. Every line means days and weeks of hard and self-denying effort. The report brings nothing especially new; but for one acquainted with the difficulties with which these investigations are surrounded, the result is of great importance. Again in an

unobjectionable way, proofs are brought for the correctness of the ideas made the guiding star of the fight against yellow fever. In a practical way we are again convinced that we have mastered the disease, and that it is hardly possible that in the future, important alterations of our views can be made. The etiologic agent, as such, has remained unknown in spite of the newspaper and other reports of its discovery. Yellow fever has been mastered without the microscope showing its face, just as other diseases have yielded to similar methods. With our present means of observation it is not likely that we will soon get much further. The work of the commission is a contribution worthy to be attached to the immortal work of Reed, Carroll and Lazear. The observations upon the discovery of a toxic substance in the blood of a malarial patient at the time of chill, able to produce similar symptoms when injected into a normal individual, is very suggestive but needs further extension and interpretation.

About the Aggressive and Immunizing Action of Staphylococcus Exudates.
 —E. HOKE (*Zeitschr. f. Hyg. u. Infect Krankh.*, Vol. LX, Heft 3).—Bail succeeded in protecting animals against infection with cultures of staphylococci by injecting living leucocytes into them. From this it was assumed that leucocytes form an important protective agent against bacteria either by preventing the production of toxins or by binding or neutralizing the toxins already present. If in staphylococcus infections a multiplication of the injected bacteria occurs, there appear substances elaborated by the bacteria and inhibiting the natural protective forces of the organism. Kruse first called them lysins. Bail designated them as aggressins. Hoke examined mainly the aggressive action of pleural exudates caused by staphylococci, and his results may be reviewed as follows: Rabbits injected simultaneously with aggressin and bacteria succumbed more rapidly to the infection than animals injected with bacteria alone. The leucocytic migration was less pronounced and exudates were not produced. Repeatedly injecting aggressin he succeeded in protecting rabbits against infection, the stimulation leading to the production of antiaggressins. In immunizing these rabbits the animals did not show any reactions, an observation which proves that aggressins are not identical with toxins.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

The Methods of Artificially Dilating the Pregnant and Parturient Uterus.
 —SIR WILLIAM J. SINCLAIR (*Jour. of Obst. of Brit. Emp.*, September, 1905). At the last Congress of the German Gynecological Society held at Kiel in June, 1905, this subject was thoroughly discussed. Leopold and Bumm, in excellent papers, first presented the two opposing views held at the present day by leading obstetricians. Leopold advocating quick dilatation by means of instruments like the Bossi dilator, Bumm

contending that all steel dilators are dangerous, and that the incision of the cervix undoubtedly is the preferable mode of procedure. Sinclair gives in his paper a very exhaustive review of these two papers and of the interesting discussion which followed. Both essayists found supporters of their respective views, possibly the majority being in favor of the Bossi dilator, as the instrument which can be used by the general practitioner without trained assistance. Sinclair concludes this review with a commentary, in which he gives his own opinion on the subject. He undoubtedly is exceedingly conservative. He repudiates both the steel dilator and the incisions, and claims that for earlier stages of pregnancy laminaria and the graduated bougies of Hegar, in later stages the colpeurynter prove sufficiently effective. Coming from such an authority as Sinclair, the following statement certainly is surprising: "Digital or manual dilatation all men with a sense of responsibility will agree in condemning. It is perhaps the most dangerous method of all, even when the os is dilatable. The effects which may be reasonably expected are laceration, hemorrhage and sepsis." It is obvious that, if Sinclair is right, most of the American authorities are "men *without* a sense of responsibility." Most of the American obstetricians sincerely believe in the value of digital dilatation of the cervix and successfully avoid laceration, hemorrhage and sepsis by using a little care and rubber gloves. Sir William has to concede "the casual objection that the laminaria tent may produce sepsis," but he does not believe in such a danger, because "laminaria tents may be more easily rendered aseptic than steel instruments." It is to be regretted that he does not describe his method of sterilization, but simply assures the reader that "they might be saturated with germicide fluids and made positively destroyers of bacteria."

The Permeability of the Tubes for Fluids.—BUTTENBERG (*Muenchn. Med. Wochenschr.*, No. 35, 1905).—In a series of experiments, made upon cadavers, the author studied the conditions under which a fluid injected into the uterus would pass through the tubes into the peritoneal cavity. He arrives at the following conclusions: If a double-current catheter is used, the tubes prove permeable only in the minority of cases; if a simple catheter is tied into the cervix, the fluid passes into the peritoneal cavity in more than fifty per cent. of the cases. As a rule, it is only a very small quantity of the fluid that finds its way through the tubes. In experiments with the syringe devised by Braun for intrauterine applications, he could press some fluid into the tubes almost in every instance in which force was used, but only if he tied the cervix around the canula of the syringe the fluid would penetrate into the peritoneal cavity. If a few drops were injected without undue force, fluid never entered the tubes, and from this the conclusion must be drawn, that Braun's syringe is free from danger if employed cautiously, in accordance with the generally accepted rules for its use.

The Auscultation of the Fetal Heartsounds in Early Pregnancy.—O. SARWEY (*Deutsche Med. Wochenschr.*, No. 33, 1905).—In the review of the gynecological literature of the year 1904 (January number of this journal) we had occasion to mention the claim of Sarwey, that he was able

to auscultate the fetal heartsounds in the 13th week of pregnancy. Von Herff doubted the reliability of this observation, because he was never able to hear any heartsounds in feti which within the first four months of pregnancy had been expelled alive. Sarwey argued against Herff that he himself auscultates the heart of a living, healthy fetus in the uterus, while Herff dealt with feti who were dying after having passed through the process of abortion. In this new contribution Sarwey asserts once more that it is possible to hear the heartsounds in the 13th week. They are most distinctly audible in a very low section of the anterior uterine wall approximately corresponding to the height of the internal os. It is advisable to raise the uterus slightly by means of a finger introduced into the vagina. The bladder must be emptied first. It often takes a long time and a great deal of patience on the part of the examiner until he has found the well circumscribed area where the heartsounds can be heard.

Insufflation of Oxygen Gas Into the Abdomen in Septic Peritonitis.—COSTA (*Annali di Ost. e Gin.*, July 1905; rev. *Brit. Jour. of Obst. and Gyn.*, September, 1905).—The author relates two cases. In the first of these the patient, after an operation for extrauterine pregnancy, in which many close adhesions to the bowels were broken through, was found to be suffering from marked general sepsis. The abdomen was reopened and washed out with salt solution and was then distended several times with oxygen. This patient ultimately recovered.

In the second case the patient succumbed to septic peritonitis after an abdominal section performed on a rupture of the uterus in a neglected shoulder presentation. In her case the author injected oxygen into the abdomen, but without any perceptible benefit. Experiments on guinea-pigs and rabbits showed that after injections of bacillus coli into the peritoneal cavity, insufflations of oxygen were sometimes curative, but that after the injections of pyococci the oxygen merely delayed the lethal termination.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

The Treatment of Nephritis in Childhood, Based on Clinical and Experimental Observation.—WEIGERT (*Monatschr. fuer Kinderheilk.*, July, 1905) contributes a valuable and extremely suggestive article on this important subject. He begins by reviewing the literature on the subject of chronic nephritis in childhood, and shows by quotations from various authorities that the most divergent views prevail concerning all phases of the question. While the general consensus of opinion would appear to indicate that chronic nephritis in childhood is relatively rare, Baginsky holds that the subacute and chronic nephritides are much more common in children than is generally supposed, and he believes that these cases are "appallingly common."

With reference to the prophylaxis of nephritis after scarlet fever (and some of the other acute infections), the same diversity of opinion is apparent. Thus, in scarlet, many authorities hold that prolonged rest in bed, with absolute milk diet, are prophylactic measures of great importance, while other equally eminent authorities consider this procedure useless or even irrational.

Again, in the matter of treatment of an existing chronic nephritis, there is absolutely no uniformity of thought or view. On the one hand, it is held that milk diet is of the utmost value; on the other, it is claimed that such diet is directly injurious.

With a view to studying the question of diet in relation to the treatment of chronic nephritis in childhood somewhat carefully, the author took four cases in his children's clinic, all typical cases of chronic nephritis, and put them on strictly controlled diets of varying kinds for definite periods of time. During and after these periods exceptionally careful analyses of the urine were made, and the general condition of the cases carefully studied.

Particular attention was also paid to the question of the amount of NaCl ingested with the food, in view of the interest now attaching to this question in relation to chronic nephritis.

The results of these studies are carefully tabulated, and while all of the details cannot be given here, the conclusions of the author may be quoted in full.

Albuminuria in chronic nephritis is most greatly *increased* on a purely meat diet. This holds good even though the ingestion of NaCl be simultaneously decreased to its possible minimum.

The albuminuria is *diminished* most decidedly by a purely vegetable diet. After meat, the greatest degree of albuminuria follows the use of a strict milk diet, with eggs and mixed diet next in order in the descending scale.

The addition of spices to the food apparently has no bad effect upon the condition.

In the diet of nephritis with edema and anasarca, the quantity of NaCl in the food is of the utmost importance. By the giving of food with the minimum quantity of NaCl, without other therapeutic measures, the excretion of the retained fluids can often be attained. But it is to be noted that in the course of this treatment, in spite of the increased elimination of the Cl and N products, an uremia may ensue.

But in many cases treated in this way, following the removal by excretion of the retained fluids, and possibly dependent upon changed circulatory conditions, a marked improvement in the general condition, and a great diminution of the albuminuria is to be noted.

Holding Breath Spells in Children.—NEUMANN (*Arch. f. Kinderheilk.*, Vol. 42, p. 99) calls attention to the frequency of this condition, to which little attention is paid in the literature. The condition is found most often in nervous children. As a result, usually, of nervous excitement, the child suffers a momentary spasm of the muscles of respiration, becomes markedly cyanotic, at times quite unconscious. During the attack the child usually falls backwards, and the spasm ends with a loud cry and a forced expiration. The duration of the attack is usually

measured by seconds. Spasm of the glottis is never associated with the condition. Examination also shows the absence in nearly all cases of the symptoms of tetany, with which the condition cannot be brought into relation. The spasm has nothing to do with epilepsy. The importance of the condition lies in the diagnostic significance that its presence affords of a neuropathic constitution. Neumann holds that the condition may be regarded as a very early sign of neurasthenia. Inasmuch as the attacks rarely occur after the fifth year, and as they are never fatal, their importance is to be found merely in their suggestiveness as to a neuropathic temperament, or as manifesting a very early sign of a neurasthenia, to be later more fully developed. The treatment of the attack consists in irritation of the skin by throwing cold water in the face, and the general treatment is that of neurasthenia.

(It is interesting to note that in his classic work on diseases of children, published in 1849, Forsyth Meigs gives an account of this condition and of its significance, which in every essential tallies with Neumann's, except, of course, that the word neurasthenia does not occur.—ED.]

Rheumatism in Childhood.—DEALE (*Archives of Ped.*, August, 1905) believes that the infectious character of rheumatism has been established; that the micrococcus rheumaticus, described by Poynton and Paine and others, may, with a good deal of probability, be considered the exciting cause. Even though the toxic specificity be not definitely settled as yet, the circulation of some toxin is evidenced by the concurrence of pyrexia, rapid anemia, erythema and purpura, polyarthritides, pericarditis, endocarditis and myocarditis.

As predisposing causes, cold and heredity undoubtedly occupy leading positions. The disease is unquestionably very common in childhood, but is doubtless very frequently overlooked, because the arthritic manifestations are often so slight—or, indeed, wholly absent. Tonsillitis or pharyngitis may be the first or only manifestations of the rheumatic state. Torticollis and growing pains are apt to be of rheumatic origin. Purpura and erythema are much more common in childhood than in later life, and subcutaneous nodules are not infrequently found at this time of life.

The cardiac manifestations are by far the gravest, and they are particularly common, and very often particularly severe, in childhood. The endocarditis may come on insidiously, its existence unknown and unsuspected until some other rheumatic manifestation leads to the examination of the heart. Even when the endocarditis is discovered during the course of the disease, the symptoms are often very vague; there may be only rapidity of the pulse, with irregular heart action, with the later development of a soft, blowing, apical, systolic murmur.

The author emphasizes the importance of the following diagnostic points:

- (1) Family history, particularly a history of rheumatism on both sides.

- (2) Previous history as regards joint stiffness without swelling, growing pains, nose bleed, or frequent attacks of tonsillitis or erythema.

- (3) Present condition with reference to anemia, malaise, listlessness, bronchial or gastric catarrh. Attacks of slight temperature without ap-

parent cause are always suspicious, particularly if they be at all persistent.

(4) Careful examination of the heart, often repeated, as to increase of precordial dullness, abnormalities as to rate or rhythm, soft apical murmurs with reduplication of the second sound.

In the treatment of the heart conditions of rheumatism the author lays particular stress on the value of prolonged rest, an observation which is in accord with the observation of the leading authorities of the day.

ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

A Study of Brachial Birth Palsy.—L. P. CLARK, M. D., A. S. TAYLOR, M. D., and T. P. PROUT, M. D., of New York (*Am. Journal of Medical Sciences*, October, 1905).—This form of palsy is undoubtedly as old as is forcible intervention in obstetric practice. It was described first by Duchesne in 1872 as being a palsy due to traction. Evidence exists, however, that these arm palsies occurred as far back as two hundred years ago. A careful review of the literature makes it evident that with very few exceptions obstetric palsy is due to manipulation during delivery. The superior arm is the most frequent type, more rarely the lower arm type has occurred, very rarely total palsy is reported. Now and then cases of individual muscle paralysis have been reported in obstetric palsy. The predisposing factors in the production of this lesion are such disproportion between the size of the child and the maternal pelvis as would delay the easy progress of labor, and especially as would hinder the rotation and descent of the shoulders after descent and extrusion of the head, rigidity of the maternal soft parts, maternal exhaustion, and any other cause which would delay labor and, therefore, lower the vitality of the fetal tissues. It is erroneous to suppose that laceration birth palsy occurs only in mismanaged labor; it may easily result in highly skilled hands, as is shown by its occurrence at the birth of Emperor William of Germany, on which occasion Sir William Jenner acted as accoucher. Though many different causative factors are cited, the results are invariably of the same type, though differing in degree. This strongly suggests that one fundamental type of nerve injury underlies all cases. In order to determine what this fundamental injury may be, the authors have dissected several subjects and examined carefully the effect produced upon the brachial plexus by the various forcible manipulations liable to occur at delivery. In twenty experiments the lesion was produced in the fifth and sixth nerves sixteen times above the junction, twice at the junction and twice below the junction. The pathology brings out why complete regeneration does not follow the accident. As the several ends are in apposition in the vast majority of instances, it might be expected that union and recovery of function would occur without incident. The nature of the force producing the

lesion, however, is not such that the nerves are pulled apart and severed clean at a given point, but the lesion is incomplete at any given cross section of nerve bundles, and involves different fibers at different levels. The treatment is divided into three classes—(a), prophylactic; (b), palliative; (c), radical. The authors have subjected seven cases to the radical treatment, which consists in cutting down upon the brachial plexus through an incision passing from the posterior border of the sterno-mastoid muscle, at the junction of its middle and lower thirds, downward and outward to the clavicle at the junction of its middle and outer thirds. Two of these cases died shortly after the operation, one of shock and the other of suppression of urine. The other five recovered without the least evidence of shock or reaction. The proper time for surgical interference is not yet definitely fixed. At the present time one year would seem to be a reasonable delay before attempting operation. Two of the cases sufficiently demonstrate the value of operative procedure by their improvement in nutrition, range of motion and muscle power of the paralyzed limb.

Contusion and Laceration of the Mucous and Alar Ligaments and Synovial Fringes of the Knee-Joint.—CARLETON P. FLINT, M. D., New York (*Annals of Surgery*, September, 1905).—The author reports four cases where he operated, because there was recent history of injury combined with subsequent conservative care without beneficial results. It is a common thing to see abnormal knees with or without effusion. A diagnosis of the nature of the trouble is often impossible. The condition is called chronic synovitis, or is explained as being due to rheumatism, rheumatoid arthritis, or is simply called "chronic knee." The exact etiology cannot be determined. There is a history of trauma in a certain number of cases with a subsequent history of intermittent or continuous discomfort. It is not usual to operate on traumatic knees in the early stages unless there is a possibility of making a fairly accurate diagnosis. One feels justified in entering the abdominal cavity for exploratory purposes on very slight provocation. It is not so with the knee joint, however, where the powers of recuperation cannot be compared with those of the peritoneum, and the disastrous results of an infected knee are painfully impressed upon the minds of all except the most fortunate surgeons. The four cases reported were cases in which an absolute diagnosis was not possible, but it was highly probable that some lesion would be found, a supposition justified by the results. All four cases had two apparent subjective symptoms, pain and limitation of function. The author calls attention to the peculiarity of the anatomical condition involved, and shows that these ligaments are simply folds of synovial membrane, containing more or less fat. The diagnosis in these cases was contusion and laceration of the alar ligaments and synovial fringe. The pathological findings proved the clinical diagnosis to be right. The subsequent history of the cases proved the operation to be of decided benefit, as all cases had return of function and cessation of effusion. He states that there should be no diminution of fear of opening the joint, as such a diminution would be followed by a corresponding increase in the number of calamities. On the other hand, should there be after injury to the knee, local pain, effusion into the

joint, local swelling, with or without subjective or objective signs, and should these persist in spite of rational conservative care, or reappear after the cessation of treatment, the knee should be opened while the seat of the trouble can be recognized and before secondary changes have taken place.

The Ultimate Results After Bloodless Reposition of Congenital Hip-Joint Dislocation.—FREDERICK MUELLER, M. D., Chicago (*Medical News*, October 7, 1905).—Discussing the results obtained in cases operated upon by Lorenz during his visit in 1902, the author refers to thirty-three cases left under his care, in twenty-one of which anatomical results were gained, whereas, the number of subspinal positions was twelve. Taking into consideration the high average age of the children operated upon by Lorenz, the result, comprising over 60 per cent. of anatomical cures, and less than 40 per cent. subspinal positions, must be called good. Statistics of surgeons in the various clinics show clearly that Lorenz's promise of 50 per cent. success is not too optimistic, and that the bloodless reposition deserves the first place among all methods which may be considered in the treatment of congenital dislocation of the hip.

A Note on Congenital Dislocation of the Hip-Joint and Its Modern Treatment.—J. JACKSON CLARKE, F. R. C. S., London (*British Medical Journal*, September 30, 1905).—Congenital dislocation of the hip must now be classed with congenital club-foot among curable affections. This really great advance in surgery is due to Lorenz, who perfected the gymnastic and manipulative method of treatment. If the patient is submitted to treatment at a suitable age and the surgeon is experienced in the various steps of the operation, the method involves no serious risk, the patient invariably improves in general health and strength, and the after treatment may be carried out at home under the supervision of the family medical practitioner. A good deal has been said concerning the anatomical aspects of the Lorenz manipulative operation. Doubts have been expressed as to whether the reduction is a true one. As long as the functional effect is satisfactory, the previous disabilities being permanently removed, it hardly matters whether or not a portion of the joint capsule intervenes between the femoral head and the acetabulum, so long as it is removed by pressure atrophy. In nearly every case the head of the femur can be brought to rest on the acetabular surface, whether at the operation or subsequently. The dangers of the treatment are greatly exaggerated. Up to four years of age there is no need to cause anything approaching violent laceration of muscles. In older children up to the age limit, the necessary manipulations can be rendered free from danger by suitable preliminary preparations.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

A Contribution to the Ætiology and Symptomatology of Syringomyelia (Traumatic Origin, Syringomyelia and Hysteria).—CURSHMANN (*Deut. Zeit. f. Nervenheilkunde*, Band 29, No. 3 and 4, 1905).—This a valuable contribution to the literature of a disease which of late has come to be recognized as one of the most important of the organic forms of nervous diseases. Ever since the publication of Schlesinger's monograph, in which he asserted that syringomyelia was one of the most common of nervous affections, second only to tabes in its frequency, the attention of neurologists has been again directed to the study of its various symptoms and its pathology in order to test the accuracy of Schlesinger's observation. In respect to the traumatic origin of this disease there has been much difference of opinion until the article of Kienbock, which apparently settled the question against the traumatic origin. He analysed very carefully all the cases reported in literature, and came to the conclusion that trauma was an unimportant factor in the disease. Curshmann's paper is based upon a study of six cases in which the traumatic ætiology is clear enough to deserve careful consideration. Two theories are advanced to explain the pathogenesis of trauma in causing the disease: 1. The gliotic process is brought into activity through inflammatory stimulation originating in the periphery. 2. The syringomyelic changes in the cord become active through an ascending neuritis. These cases are studied in the light of these two possibilities, and the conclusion is reached that trauma is a factor in the causation of the disease or that it can arouse into activity the process which causes the disease. A very valuable part of this paper is the discussion of the differential diagnosis between hysteria and syringomyelia. In regard to this question the conclusions of the author may be stated as follows: 1. In regard to sensibility. There is no means of distinguishing the ordinary sensory disturbances in hysteria from syringomyelia. A real dissociation of sensation speaks for the latter. 2. Motility. Degenerative atrophy, increasing paresis and contractures are characteristic of syringomyelia. 3. Reflexes follow the usual rules. 4. Vasomotor and trophic disturbances of the skin of a mild grade cannot be used except with great care in the differential diagnosis. 5. All symptoms pointing to the sympatheticus cannot be imitated in hysteria and therefore speak strongly for the other.

A Sign of Organic Paralysis of the Lower Extremity.—J. GRASSET and A. GAUSSEL (*Revue Neurologique*, No. 17, 1905).—Any symptom which enables the neurologist to distinguish between a paralysis of organic origin and one of functional origin is worthy of attention, and therefore this new symptom should be given publicity so that there may accumulate sufficient material to test its accuracy and therefore its utility. The sign is as follows: In a paralysis of organic origin of the inferior ex-

tremity, especially in hemiplegia, the patient is able to elevate the paralysed member alone and is unable to elevate both extremities at the same time. This sign is not in accord with what we know in respect to the great facility with which associated movements in hemiplegia can be carried out. It can be interpreted as a proof of the paralysis of stability of the pelvis in the movements of flexion of the thighs upon the pelvis. The study of this symptom places it with the observations of Babinski and Marie in the analysis of motility in cases of hemiplegia. Lastly it enables us to differentiate between the organic and the inorganic paralysis, always a task of some difficulty.

Acute Anterior Poliomyelitis in a Youth.—HOCH (*Journal of Nervous and Mental Diseases*, September and October, 1905).—This study is based upon the case of a boy, sixteen years of age, who died thirteen weeks after the onset of the attack. From the findings in this case and from a review of the literature the author draws the following conclusions: 1. Anterior poliomyelitis is the result of a primary inflammatory disease of the blood vessels of the cord, which may be thrombotic or embolic. 2. The destruction of the ganglion cells is secondary and depends in part upon the deficient blood supply of the diseased area and in part upon pressure and toxins. 3. The pathologic processes occurring in poliomyelitis of children and adults are apparently identical and dependent upon similar causes. 4. There is sufficient evidence at hand to consider the disease, as a rule, of an infectious nature, however not depending upon a specific micro-organism, but resulting from infections of various kinds and at times from other poisons. 5. The inflammatory changes are present in the peripheral vessels as well as in the branches of the anterior spinal artery, though these changes are seldom visible until the vessels enter the gray matter. 6. The inadequate collateral circulation within the anterior horns is favorable for sluggish circulation and embolism.

Polyneuritis Cerebralis Menierformis.—BERGER (*Neurologisches Centralblatt*, No. 18, 1905).—This is an important observation which may throw some light on a group of symptoms sometimes found in conjunction with the meniere symptom complex and which has given rise to difficulty in interpretation. Frankl-Hochwart was the first to call attention to this form of cranial nerve involvement and Menieres disease. Only a few cases have thus far been published. The case here described presents the following symptoms: In a man fifty-five years old, with no previous history of ear trouble, and up to the time of the appearance of the symptoms, in good health, developed, after a light attack of fever as a result of chilling, a total right-sided facial paralysis, ear disturbances in the way of tinnitus, difficulty in hearing, a lowering of the sensation of touch on the right side of the face with herpes eruption. These symptoms came on with vertigo, nausea, vomiting.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

The Early Diagnosis and Radical Cure of Carcinoma of the Prostate.—YOUNG (*Bul. Johns Hopk. Hosp.*, Oct., 1905). We find here reported six cases of early carcinoma of the prostate in which the malignant nature of the disease was not recognized, and a partial operation was performed by the author. These cases impressed him with the need for early diagnosis and a radical method of removal. He proposes a radical operation as a routine for cases of carcinoma of the prostate, and gives histories of four operated cases. In this operation the author proceeds as he does in the operation he has performed for prostatectomy. After the under surface of the prostate is exposed in the wound, if it is malignant the radical operation is proceeded with, thus: the handle of the tractor is depressed, the membranous urethra anterior to it is exposed and completely divided transversely. By further depression of the tractor the pubo-prostatic ligament is drawn taut and divided with scissors, completely severing the prostate from all important attachments, except posteriorly. The lateral attachments are easily separated by the finger. The posterior surface of the seminal vesicles are now freed by blunt dissection. The now mobile prostate being well out of the wound, by depressing the tractor and making strong traction, the anterior surface of the bladder is exposed and incised at a point in the middle line about 1 cm. behind the prostatic-vesical junction, this division being continued on each side until the trigone is exposed. The ureters are now found and the line of incision carried across the trigone so as to pass 1 cm. in front of the ureteral orifices. The seminal vesicles and adjacent vasa deferentia are now freed anteriorly as high as possible and divided, thus removing the entire prostate with its capsule intact, the seminal vesicles, 4 cm. of the vasa deferentia and a cuff of the bladder. The anterior wall of the vesical opening is caught with forceps and united to the membranous urethra. The remainder of the vesical wound now presents as a longitudinal opening, which is closed by sutures. The wound is lightly packed with gauze, the levator ani muscles drawn down together in front of the rectum and the skin sutured, except at the angle in front, for exit of the gauze drain. The catheter is put through the meatus into the bladder.

Of four cases operated upon, one died from the operation; one died seven months later, following an operation for a stone which had formed in the bladder about a silk ligature. Autopsy showed recurrence of carcinoma. The third case recovered with continence of urine at night, but imperative desire in the day time and no evidence of return of the growth since the operation, February 16, 1905. The fourth case operated upon May 12, 1905, recovered, has no pain, urine passes entirely through the urethra, and rectal examination is negative. The patient feels well, but as yet has no control over his urine.

The author next considers clinically and pathologically forty cases of

carcinoma of the prostate and observes that partial operations are of no permanent utility. The question of early diagnosis is reviewed, and a markedly indurated prostate in a man over fifty years of age is regarded with suspicion. If it is of stony hardness it is very apt to be cancerous, especially if the cystoscope shows little or no enlargement intravesically as in the ordinary prostate.

If, after exposing the prostate and palpating it, the author is still in doubt, he removes a section and has it at once examined by the freezing method, when, if it is malignant, he proceeds with the radical operation.

Cure can be expected only from radical measures, and routine removal of the seminal vesicles, vasa deferentia and most of the vesical trigone with the entire prostate, as demonstrated on the four cases reported, is simple and effective, and markedly satisfactory functional results follow.

Contribution to the Study of Treatment of Wounds of the Ureter in the Course of Surgical Operations.—BERNASGONI and COLOMBINO (*Ann. des Mal. des Org. Urin.*, Sept. 15, 1905.) Through experiments on dogs the authors have demonstrated the feasibility of anastomosing one ureter into its fellow, and sum up their investigations in the following conclusions:

When in the course of an operative procedure the ureter is accidentally wounded, the condition may be remedied in the following way: If the division is a few centimeters from the bladder, the ureter may be pulled down 3 to 4 centimeters and implanted into the bladder. If the division is higher up, either at the level of the iliac or the lumbar region, two expedients present themselves: (a) a simple section without a loss of substance, or with a slight loss of substance, when we may approximate the divided ends of the ureter and anastomose them according to the methods of Van Hook or others. (b) section with loss of ureteral substance, rendering impossible the coaptation of end to end. In this case, in view of the satisfactory results obtained experimentally as here reported by the authors, lateral anastomosis of the two ureters with each other should be attempted. The operation is no more difficult or long than uretero-enterostomy and can be done easily, especially in women, at the level of the 4th or 5th lumbar vertebra.

Inflammatory Stricture of the Deep Urethra.—KEYES, JR., (*Ann. des Mal. des Org. Urin.*, Aug. 15, 1905.) Inflammatory stricture of the posterior urethra has been admitted by some authors but denied by the majority. This condition has been summed up by Keyes, Sr., as contracture of the neck of the bladder. From a series of cases operated upon it is apparent that this contraction of the neck is entirely independent of the prostate. When operating upon these cases, after making the perineal section, the finger, as it is introduced, in coming upon the vesical neck, instead of meeting with a muscle supple and extensible, encounters a hard, fibrous ring, perhaps friable, perhaps so resistant that the finger cannot penetrate into the bladder without considerable force.

The effects upon the bladder and kidneys are in the young man those of stricture of the urethra; in those more advanced in age, the picture is

that of prostatic hypertrophy, and corresponds to what has been designated as *prostatism without prostate*. It is usually a consequence of prolonged gonorrheal infection.

The symptoms and diagnosis of these two types (the inflammatory and retention) are thoroughly considered by the author. Occasionally we find stricture of the posterior urethra complicating prostatic hypertrophy, the symptoms not being relieved by prostatectomy until the stricture is operated upon.

Formerly the operation for the relief of stricture of the posterior urethra consisted of a perineal incision followed by cutting or tearing of the stricture. Hemorrhage and incontinence make this operation less desirable than that adopted since 1900, which consists of making a galvano-cautery incision into the neck of the bladder, after perineal section, with the Bottini galvano-cautery instrument, according to the method of Chetwood.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

Esophagoscopy in the Diagnosis and Treatment of Foreign Bodies in the Esophagus. — NEUMANN (*Monatsheft fuer Ohrenheilkunde, etc.*, Jhrg. XXXIX, No. 8) reports in detail his experience with the esophagoscope in dealing with foreign bodies in the esophagus. During the past eight years, twenty-four cases came under his observation. Among these was a child aged one and a half years and a woman aged seventy-two. In some of the cases the foreign bodies had been in position for weeks, and in a number all sorts of measures had been employed in attempting to remove them. The instruments employed by the author was a Mikulicz-Haker tube for adults and the Killian bronchioscopic tube for children. These were introduced with either hard or soft bougies used as guides. All examinations were made in the recumbent position. In seven of the cases a general anesthetic was required, while in the remainder local anesthesia of the meso- and hypo-pharynx, with a ten per cent. solution of cocaine, was sufficient. He compares the esophagoscope with the other means at our command for diagnosing foreign bodies in the esophagus, viz: the passing of sounds and the x-ray, and points out how small foreign bodies are overlooked which may be easily seen with the esophagoscope.

Of the twenty-four cases reported, the author was able to see the foreign body in twenty-one of them and to remove the same in nineteen. In two of the cases the foreign bodies were so firmly impacted that esophagotomy was found necessary. Both of the cases were fatal. According to Kalojeropoulos, the mortality of esophagotomy, under favorable circumstances, is 20 per cent. The writer concludes that esophagoscopy is not only a safe procedure, but the most certain method of diagnosing foreign bodies in the esophagus, and with its aid by far the greater number of foreign bodies can be removed.

The Operative Treatment of Purulent Meningitis.—HINSBERG (*Monatsschrift fuer Ohrenheilkunde*, Band 50, Heft 3).—During the last ten years a number of cases of purulent meningitis of otitic origin have been reported which did not terminate fatally. Three years ago the author collected three cases in which lumbar puncture had shown the presence of bacteria in the cerebro-spinal fluid, and which showed unmistakable clinical symptoms of meningitis. In these cases recovery followed simply the removal of primary infection in the mastoid. Since that time other cases have been reported. Up to 1901 only three cases of otitic meningitis had been reported in which recovery followed an incision of the dura and the evacuation of a collection of pus in the pia. Since that time seven other cases have been reported. In five other cases marked improvement followed the drainage, but they finally succumbed. In all the cases the symptoms before operation were such that death would have probably very quickly ensued had the drainage not been made. In all cases improvement followed immediately after operation. According to Witzel, as much of the bone should be removed as necessary to uncover all the diseased area of the pia. In some of his cases he has made an opening in the skull as large as the palm of his hand.

Another important point is the drainage; this Witzel does with gauze tampons, which are so placed that they drain from all points, and are allowed to remain fourteen days, after which they are carefully removed. The question is when to operate. The chances for recovery are, as a rule, much greater when drainage is made early.

Owing to the fact that in some cases of meningitis an exact diagnosis is not always possible, as lumbar puncture sometimes gives uncertain results. The writer believes an exploratory opening, when carefully made, does not endanger the life of the patient.

According to Hinsberg, a diffuse meningitis is no longer a contra indication for operation interference, but he believes every effort should be made to save these cases by operation.

Three Cases of Trifacial Neuralgia Due to Intra-Nasal Causes and Treated by Intra-Nasal Methods.—CANFIELD (*Laryngoscope*, September, 1905).—The writer reports three cases of trifacial neuralgia of nasal origin.

In the first case the patient had suffered with a right-sided trifacial neuralgia for two and a half years. The pain was characterized by paroxysms of extreme intensity; the pain was confined to the ophthalmic division of the fifth nerve. It was at first noticed as twinges in the skin covering the tip and also the right nostril. Later the skin of the cheek became involved, with a burning pain behind the eyeball. All forms of treatment had been employed, and the resection of the Gasserian ganglion had been considered, but abandoned owing to the condition of the patient's heart. Nasal examination revealed a slightly deviated septum, with the middle turbinate in contact for a quarter of an inch in diameter. The removal of the anterior end of the turbinate was followed by complete relief.

The second case was of eight years' standing, and had been sent to the hospital for resection of the Gasserian ganglion. Nasal examination revealed an area of pressure between the middle turbinate and the septum. The turbinate showed a marked polypoid degeneration. Appli-

cations of cocaine and adrenalin were followed by marked relief. Resection of the middle turbinate was advised, but refused, as patient was satisfied with relief obtained from spray of cocaine and adrenalin.

The third case was also of some eight years' standing, the pain being limited to the right side of the nose and upper lip. The pain was almost constant. In this case there was also an area of pressure between the septum and middle turbinate. Complete relief followed the removal of the turbinate, and there was no return of the trouble.

Frontal Sinusitis; Two Cases of Death After Operation.—THOMSON (*Lancet*, August 12, 1905) reports two fatal cases of frontal sinusitis, from which he draws the following conclusions:

(1) In cases of multi-sinusitis it is well to drain the maxillary cavity some time before the frontal is operated on. Both cavities may be operated on at the same time, but if only one sinus is operated on at a time, it should be the frontal sinus, the lower being drained until it can be opened.

(2) In spite of free opening of the frontal sinus, the establishment of a large communication with the nose, and the avoidance of closure of the external wound, a slow infection of the bone may take place, leading ultimately to infection of the meninges. This may even be started in suppurating cavities on the opposite side to the one operated on.

(3) The local condition of the wound, as well as the pulse, temperature and feelings of the patient, may fail to indicate the onset of mischief. After one to three weeks this is revealed by headache, pain, tenderness and a puffy swelling on the forehead or around the eyes.

(4) When septic osteomyelitis has started, the most vigorous measures may fail to arrest it. It may last one and a half years before terminating fatally.

(5) The chief danger appears to lie in the ethmoid labyrinth, owing to its anatomical irregularities and to the difficulty of treating them satisfactorily.

(6) Up to the present, the operation which best meets these difficulties is that of Killian. In many cases a preliminary intra-nasal operation on the ethmoid is advantageous.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

MARTIN F. ENGMAN, M. D.

A Case of Blasto-Mycitic Dermatitis.—HALSEY M. LYLE (*Kansas City Medical Index Lancet*, October 1905).—The author has had three cases of this condition in his practice. The one, the subject of this report, occurred in a colored man, aged fifty-two years. The patient was a miner, who frequently was in water and mud to his knees. The disease began three years ago in a small lesion on the right leg, between the knee and ankle. The disease became general, and the patient died in May from systemic involvement.

The Consideration of Late Hereditary Syphilis.—R. R. CAMPBELL (*Medical News*, October 7, 1905).—The author of this article brings up an interesting subject, which has long been a disputed point in syphilology. He says on several occasions young girls of from five to eighteen years of age have been shown at the meetings of the Chicago Dermatological Society, who presented undoubted lesions of tertiary syphilis without a history of extragenital infection or previous eruption of syphilis, and in whom none of the triad of symptoms of hereditary syphilis was present. In the discussion of these cases it was apparent that a difference of opinion existed as to whether these were cases of extragenital infection or of long periods of latency in hereditary syphilis. Then follows the question: Can hereditary syphilis manifest itself for the first time some years after birth by the presence of such late lesions as occur in the acquired form, and with the total absence of the triad of symptoms? The author states that we have grown away from the teachings of Kaposi and others who claim that cases of latent hereditary syphilis are not authentic. They say that if this disease be congenital or hereditary, there must have been infantile manifestations. We accept as facts the teachings of Fournier and others that these cases are authentic and do occur.

A Preliminary Report Upon the Spirochaete of Syphilis.—ANTONIO FANONI (*Medical News*, October 7, 1905).—The writer has examined a number of syphilitic subjects for the purpose of demonstrating and studying the morphological features and staining properties of the spirochaete recently described by Schaudin and Hoffman. The material for this work was obtained from twelve cases of primary and secondary syphilis, including material taken from chancres, inguinal glands, condylomata, papules and mucous patches. Scrapings were made with a sterile scalpel. Giemsa's original method was used for staining. The method recommended by Oppenheim and Sachs, which the author also used, is as follows: The slides, being first dried in the air, are placed in the following solution without fixation: 100 cc. of 5 per cent. carbolic acid solution with water, 10 cc. concentrated alcoholic solution of gentian violet. The slide is dried slowly by very gently heating it over a Bunsen flame until it begins to steam. Wash in water and dry with filter paper. The spirochaete will appear stained very distinctly blue, and appear larger than those stained by the Giemsa stain. The author states, from his examinations thus far, that while the spirochaete pallida is more or less constantly present in syphilitic lesions, yet it requires patient and protracted search of the specimens to find it, and then usually in isolated form.

A Plea for the More General Use of Tuberculin by the Profession.—SIR T. MCCALL-ANDERSON (*British Journal of Dermatology*, September, 1905).—The writer remarks that when first introduced by Koch, medical men tumbled over one another in their eagerness to obtain a supply of this preparation, which was supposed to ring the death-knell of tubercular disease. The consequences were what might have been expected. It was used often in a reckless and indiscriminate manner, in cases altogether unsuitable, in doses too large and too frequently repeated, thus

leading to disappointment and disaster. Hence the extravagant laudation with which the discovery was hailed, and for which Koch was not responsible, soon gave place to an equally absurd depreciation of its merits, so much so that the writer believes it now finds no place in the armamentarium of the great majority of the medical profession. Upon looking over the indices of the last six volumes of the Transactions of the Dermatological Society of Great Britain and Ireland the author failed to find the heading "Tuberculin" in any of them. He states that, like most other powerful remedies, it is useless or even hurtful if not administered with the requisite knowledge and skill. Having employed it continuously since its discovery, he feels that he has come to know pretty well the most suitable class of cases and the precautions to be adopted in its use. Almost invariably cases of cutaneous tuberculosis have been benefited, and in many the manifestations have entirely disappeared. In his preliminary remarks the author illustrates the value of tuberculin, first in diagnosis, and, second, in treatment. Under the first head he cites three cases in which reaction proved satisfactory, and thus, through the diagnosis, improved the patient. He says that the tuberculin directs our attention to unsuspected foci of the tubercular disease. For instance, in a patient with lupus of the face, injections will demonstrate other areas of infection, if there are any. The author also places great weight upon the value of this remedy in the treatment of tuberculosis, and he suggests that in carrying out the treatment the following rules should be observed:

(1) The initial dose of the old tuberculin, in the case of an adult should not generally exceed $\frac{1}{2}$ cc. of 1 in 1000, and sometimes it is safer to begin with $\frac{1}{4}$ cc.

(2) If a given dose yields little or no result, it is usually safer to give a second of the same strength as the last, because the latter often acts much more severely than the former, of which many illustrations have been afforded by the temperature charts.

(3) The more pronounced the constitutional reaction the longer should the interval be before the following injection, an interval of several days of apyretic temperature at all events.

(4) Much greater care must be exercised in increasing the doses at the earlier than at the later periods of the treatment, because the system gradually gets acclimated to it; so much so, indeed, that while an initial dose of $\frac{1}{2}$ cc. of 1 in 1000 may raise the temperature to 103° or 104° , the final dose, say of 1 cc. of pure tuberculin, may have no result at all.

In directing attention to the subject the author has no wish to minimize the value of other methods of treatment, above all, that of the Finsen light, which is undoubtedly a very valuable addition to our therapeutic resources. On the other hand, an extended experience has led him to the conclusion that the armamentarium of the practitioner is incomplete if, in dealing with tubercular affections, it does not include the use of tuberculin, whether regard be had to questions of diagnosis or of treatment. Besides, it must never be forgotten that we are not all built upon the same mold, and that treatment suitable and efficacious for some patients is useless or even injurious in the case of others. And there can be no question that there are many cases of tubercular disease for which, from their situation or from their extent, the light

treatment is inapplicable, whereas neither situation nor extent contra-indicates the tuberculin treatment.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

Difficulties in Diagnosticating the Syphilitic Nature of Iritis.—E. AUBINEAU (*Ann. d'Oculist*, August, 1905) —The determination of the specific nature of iritis is beset with many difficulties. Nodular lesions of the iris, the so-called condylomata, are present also in tuberculosis of the iris. The presence of hemorrhagic plaques (the so-called papules of Desmarres) constitutes, in the author's opinion, an almost pathognomonic sign. In addition, the therapeutic test, a complete physical examination and a correct anamnesis are important diagnostic resources.

Hereditary Congenital Night Blindness Without Visible Ophthalmoscopic Changes.—W. W. SINCLAIR (*Ophthalm. Review*, September, 1905).—Dr. Sinclair refers to Nettleship's paper on "Some of the Forms of Congenital and Infantile Amblyopia," as well as to cases described by Morton and Tatham Thompson. The distinguishing feature of the cases described by Nettleship is a congenital stationary night blindness associated with inconspicuous fundus changes. The disease may run through several generations, transmission usually taking place through the mother. The majority of the individuals affected were males. Myopia was present in all. Sinclair had the opportunity of observing two members of a family afflicted in this manner and was able to construct a pedigree of similarly affected members, covering a period of five generations. These cases do not conform altogether to the clinical picture drawn by Nettleship, the following being points of special interest:

(1) Females were affected as well as males.
(2) In neither of the cases seen was the condition associated with myopia.

(3) The ophthalmoscopic appearances were normal in every respect.

(4) When a father or mother was unaffected their children invariably escaped. The affected members, though, with normal sight and full visual field in daylight, were night-blind to such a degree that when they had to go out anywhere after dusk one of the unaffected members had to accompany them in the capacity of a guide. When illumination fell below a certain point there was a sudden great reduction in the field. In a sister (not night-blind) the light minimum was two as against seven for one of the patients.

There was no consanguinity and no deafness or other defect. Indeed, all the members seen were "pictures of health." The condition seems best explained as an inherited diminution in the photo-chemical activity of the retina.

Note on the Treatment of Cancer by Radiotherapy.—E. VALUDE (*Ann. d'Oculist*, August, 1905).—Valude reviews four cases representing the various types of skin cancer affecting the external portions of the eye. Three were treated exclusively by radium and one by radium followed by the x-ray.

Case 1. Rodent ulcer recurrent after treatment by caustics and operation. The ulcer was oval with indurated borders and adherent crusts. Applications of radium failed entirely to check the disease or even to relieve the excruciating pain.

Case 2.—An indurated lump surrounded the entire inner angle of the right eye. The conjunctiva of the lower lid and the inner angle was the seat of a waxy new formation. The lid could scarcely be opened. Ten applications of a tube containing ten milligrams of bromide of radium resulted in notable diminution of the infiltration surrounding the cutaneous nodule and increased ability to open the lids. The unhealthy conjunctiva did not show any distinct improvement. Treatment by radium was then supplemented by twenty x-ray sittings. Final result: total disappearance of the marginal tumor and induration. The upper lid remained swollen and vascular and partly attached to the lower lid and the bulbar mucosa. There was no change in the conjunctiva.

Case 3.—A granulating tumor situated in the region of the lachrymal sack. Two applications of radium, a fortnight apart, resulted in the entire disappearance of the tumor.

Case 4.—A papilloma involving to an equal extent the margin of the upper lid and marginal mucosa. Previous unsuccessful treatment with caustics. A single application of radium sufficed to effect a complete disappearance of the tumor. No recurrence fifteen months later.

These cases, in Valude's opinion, tend to support the contention that only benign or slightly malignant cancers are amenable to treatment by any form of radiation. The opinion is expressed that operation (excision) is the method of choice for malignant tumors.

Asthenopia Due to Latent Hyperphoria.—G. D. HALLETT (*Med. Rec.*, October 7, 1905).—The patient had long worn glasses correcting a hyperopic astigmatism without relief from severe headaches, pain in the back of the neck, and supraorbital neuralgia with lachrymation and blepharospasm.

Hallett determined a left hyperphoria of $\frac{1}{2}^{\circ}$. A prism of $\frac{1}{2}^{\circ}$, base down, greatly increased the comfort of the patient. Subsequent examinations uncovered more and more of a latent hyperphoria, until finally a total left hyperphoria of $2\frac{1}{2}$ was discovered. The final prismatic correction—equivalent to $2\frac{1}{2}$ base down before the left eye—entirely relieved the head symptoms.

BOOK REVIEWS.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, assisted by H. R. M. LANDIS. September 1, 1905. Lea Brothers & Co., Philadelphia and New York. Six dollars per annum.

The volume before us, the third published this year, contains reviews of the literature on the following subjects: "Diseases of the Thorax and its Viscera, including the Heart, Lungs and Blood Vessels," by William Ewart; "Dermatology and Syphilis," by William S. Gottheil; "Diseases of the Nervous System," by William G. Spiller, and "Obstetrics," by Richard C. Norris. The subjects are covered in the complete and interesting manner, which has become characteristic of Progressive Medicine.

TRAITE DE GYNECOLOGIE CLINIQUE ET OPERATOIRE. Par S. Pozzi, Professeur de Gynecologie a la Faculte de Medicine de Paris. Quatrieme edition. Masson et Cie. Editeurs. Paris. 1905.

Probably no other work on gynecology enjoys the same world-wide reputation as that of Samuel Pozzi, of Paris. Translated into almost all languages of the civilized world, it has become the standard text-book of gynecology. The advance made within the last several years, especially in regard to the operative treatment of gynecological diseases, has made a new edition of the work highly desirable.

Pozzi's Gynecology is beyond criticism, it is too well known to require a review of its scope or its contents, and thus we may limit ourselves to announce here that the first volume of the thoroughly revised fourth edition has just appeared.

THE OFFICE TREATMENT OF RECTAL DISEASES. By RUFUS D. MASON, M. D., Omaha, Nebraska. Third Edition. The Burton Company, Minneapolis, Minnesota. 1905.

As indicated in its title, this little volume is devoted to a consideration of all those diseases of the anus, rectum and sigmoid flexure, which can be treated medically or surgically without the use of a general anesthetic. The diagnosis is discussed very briefly, etiology, pathology, anatomy and major operations are omitted. There are excellent exhaustive treatises existing on rectal diseases, but there was need for a volume of this size, which would give to the physician in general practice, and also to the student, just enough information to familiarize him with this somewhat neglected subject. The fact that the first and second edition of this work have been sold out in less than four years, attests the value of this volume of 220 pages.

A TEXT-BOOK OF DISEASES OF WOMEN. By BARTON COOKE HIRST, M. D., Professor of Obstetrics. University of Pennsylvania. Second Edition. Revised and Enlarged. Octavo of 741 pages, with 701 original Illustrations, many in Colors. Philadelphia and London: W. B. Saunders & Company. 1905. Cloth, \$5.00 net; Sheep or Half Morocco, \$6.00 net.

Written on the same lines as his text-book of obstetrics, to which it may be called a companion volume, it gave every promise of attaining a similar success. The fact that two years after the appearance of the first edition the publication of a second edition

became necessary, clearly proves the popularity of this book. In this second edition the revision has been thorough. Forty-seven new illustrations have been added and 30 of the old ones replaced. In its present form, Hirst's gynecology can be heartily recommended to both the student and the practitioner.

MANUAL OF DISEASES OF THE EYE. By CHARLES H. MAY. 400 pages, 21 colored plates, including 60 colored figures; 360 engravings in the text. Fourth edition. Price, muslin, \$2.00 net. William Wood & Co., 51 Fifth ave., New York.

Dr. May's Manual, which may be considered typical of all that is excellent in such a book, has now reached its fourth edition. The universal esteem in which this work is held is attested by its translation into several continental languages. A number of changes, all for the better, have been incorporated in this edition. The type is selected so as to impress instantly upon the mind of the student the most important features of each paragraph. Thus the subject of the paragraph is indicated by heavy-faced type, and the most important words in the body of the paragraph are printed in italics. The student is thus enabled to obtain, at a glance, the gist of each subject. We observe that certain crude cuts of the earlier editions have been replaced by excellent photographs, and that the rather diagrammatic colored plates of the fundus have given place to others more truly representative of actual conditions. The colored plates, with which the book is profusely supplied, are extremely well done.

All things considered, we cannot imagine a better book to place in the hands of the beginner in ophthalmology. It also fulfills the needs of the general practitioner the exigencies of whose practice occasionally compel him to handle injuries and diseases of the eye.

THE CARE AND FEEDING OF CHILDREN. By L. EMMET HOLT, M. D., Professor of Diseases of Children in the College of Physicians and Surgeons, New York. Third Edition, Revised and Enlarged, D. Appleton & Company. 1905. Price, \$0.75.

This little volume gives in the form of questions and answers information practically upon every problem that may present itself to the young mother who raises her first child. In this new edition of the catechism much more space has been given to the principles of infant feeding. The reviewer's opinion concerning the value of the booklet is best illustrated by the fact that he makes a practice of recommending to every primigravida a perusal of this volume.

A COMPEND OF HISTOLOGY. By HENRY ERDMANN RADASCH. With 98 Illustrations. Blakiston's Son & Company, Philadelphia. 1905. Price, \$1.00 net.

This is one of the Quiz-Compendis, and possibly one of the best of the whole series. The subject is presented in a clear and concise manner, and the book is up-to-date, as can be readily seen from a perusal of a chapter like that on placenta and umbilical cord.

LES PROCESSES GENERAUX. Tome Second. Par A. CHANTEMESSE and W. W. PODWYSOTSKY. Paris: Masson & Co. 1905.

The second volume of this splendid work is more replete than the first, deviating altogether from the method so far followed in France in the writing of text-books on pathology, from the emphasis with which diagnostic and therapeutic views are considered with the pathological aspects. This book is purely pathologic, and as such stands alone. It is unnecessary to state that it represents the modern state of pathologic opinion; it is international, as home and foreign work is equally utilized for its contents. What must be pronounced as its highest achievement is the considera-

tion given to the results of the investigation of experimental pathology. A further merit consists in the freedom from apodictic statements and in the frankness with which the uncertainty of the truth of many generally accepted ideas is demonstrated. The work excels in the exactness of the histological subjects that is paralleled by a great number of equally exact and at the same time clear illustrations. As a source of general information on general pathology as well as a reliable representation of modern problems of this branch of science, the book has no superior, not even in the German or English literature.

COLOR-VISION AND COLOR-BLINDNESS. A Practical Manual for Railroad Surgeons. By J. ELLIS JENNINGS, M. D., (University of Pennsylvania). Formerly Clinical Assistant Royal London Ophthalmic Hospital, etc. Second Edition. Thoroughly Revised with Illustrations. 132 Pages. Crown Octavo. Price, Extra Cloth, \$1.00 net. F. A. Davis Company Publishers, 1914-16 Cherry street, Philadelphia, Pennsylvania.

This little manual, the first edition of which appeared in 1896, was written in the hope of stimulating further effort in the direction of eliminating the color-blind from the service of the railroads in the country. This second edition has been carefully revised and the following new matter added:

1. A chapter describing the methods of testing the Form and Light Sense.
2. A chapter giving the rules for the examination of the sight and hearing of railroad employees adopted by the House of Delegates of the American Medical Association.
3. Descriptions of Williams' and Thompson's lanterns; Williams' and Black's Semaphore Charts, and Abney's Pellet Test for central Scotoma.
4. Five new illustrations.

The manual fulfills precisely the purposes for which it is intended. The author's wide experience in this branch of ophthalmology has enabled him to make a selection of the most practical features of the subject. Dr. Jennings has compressed within a small compass a remarkably complete exposition of the subject, which is presented in a clear and concise manner. Altogether this is one of the best, if not the very best short treatise in the English language. A bibliography of the works referred to is appended.

A MANUAL OF THE PRACTICE OF MEDICINE. By A. A. STEVENS, A. M., M. D., Professor of Pathology in the Woman's Medical College of Pennsylvania, and Lecturer on Physical Diagnosis at the University of Pennsylvania. Seventh Edition Revised. 12mo of 556 pages, illustrated. Philadelphia and London: W. B. Saunders & Company. 1905. Flexible Leather, \$2.50 net.

There is possibly no other work of this size extant which contains so much information on the practice of medicine. The author's epigrammatic style, and a judicious elimination of theories and redundant explanations, enabled him to bring within a small compass a complete outline of the subject.

DISEASES OF THE LIVER, GALL BLADDER AND BILE DUCTS. By W. D. ROLLESTON, M. A., M. D., (Cantab) F. R. C. P. W. B. Saunders & Co. Philadelphia.

This special treatise on the liver and associated structures consists essentially of a series of monographs on the individual diseases of these organs. The material is drawn largely from the author's experience at St. George's Hospital, London, the statistics of which he uses liberally, without devoting undue space to the pathological side. The writer gives a thorough consideration to the fundamental pathological anatomy and physiology involved in each subject.

The section on cirrhosis of the liver is a most noteworthy study of the condition. To avoid further confusion between the anatomical and clinical classifications of cirrhosis the author divides cirrhosis broadly into two principal types: (1) the ordinary or portal cirrhosis; (2) the biliary type, with sub-varieties; under (1) the pigmentary cirrhosis; under (2) (a) hypertrophic biliary cirrhosis, and (b) obstructive biliary cirrhosis.

The subjects of diseases of the gall bladder and of the bile ducts are both clinically and anatomically so intimately connected that it is difficult to understand why the author should have chosen to consider them separately, and particularly why the subject of gall stones should have been placed exclusively among the diseases of the bile ducts. The etiology, the mechanical consequences, and the symptomatology of this latter condition have been most satisfactorily considered.

Not the least of the merits of the volume are its excellent illustrations.

ATLAS AND EPITOME OF OPERATIVE OPHTHALMOLOGY. By DR. O. HAAB.

Authorized translation from the German, with editorial notes and additions. Edited by C. E. DE SCHWEINITZ, A. M., M. D., with 30 colored lithographic plates, and 154 text cuts. Philadelphia, New York, London: W. B. Saunders & Co. 1905.

This "Operative Ophthalmology" makes the third of the beautifully illustrated volumes on ophthalmic subjects by the same author. The predecessors to the present volume are the "Atlas of External Diseases of the Eye" and "Atlas of Ophthalmoscopy."

This volume has been done into readable English that smacks but little of the German idiom. Dr. De Schweinitz has performed his editorial task in no perfunctory manner. His annotations are always helpful and illuminating. Whenever his views diverge notably from those of Dr. Haab, he explains his position fully.

The book is marred by that fault so widely prevalent among American medical publications, namely, careless proof reading. A few of the most obvious errors are as follows: Page 93, line 14, "0.05 m." should be "0.5 m." P. 97, line 10, the discerning reader will probably read "extracted" for the printed "extraced." P. 217, "Simeon Snellen" should be "Simeon Snell." P. 242, lines 6 and 8 from the bottom, "cornea" should be "conjunctiva." P. 275, last line, "palpebral" should be "bulbar." We trust that future editions will be free from these unfortunate blemishes.

DISEASE OF THE HEART AND AORTA. By THOMAS E. SATTERTHWAITE, M. D. E. R. Pelton: New York City.

This little work of some 290 pages presents in a concise form the salient points on diseases of the heart and aorta, for the student and practitioner of medicine. The author has not intended the work for an encyclopedia, but rather as a work for practical application. Little space is given to the anatomy or surgery of the heart, anomalies, tumors, etc. He has tried to avoid making it a compilation, but rather a presentment, based upon his personal experience of cardiac and aortic affections. The volume is based on a series of articles that appeared in medical periodicals; revised, however, and new chapters added. All in all it is a very satisfactory presentation of the subject and contains a number of excellent chapters. The chapters on Graves' disease, Nauheim methods with American adaptations and on arteriosclerosis are worthy of special mention.

DIE SEXUELLE FRAGE. Ein Naturwissenschaftliche, Psychologische, Hygienische und Soziologische Studie fuer Gebildete. Professor AUGUST FOREL. 588 Seiten. 23 Abbildungen. Verlag von Ernst Reinhardt. Muenchen. 1905. Price Mk. 8.

The number of treatises on the sexual question is large. The general interest of the lay public in the intricate problems of sexual life has prompted the publication of numerous books written solely for mercenary purposes. There do exist some very valuable scientific considerations of certain special topics of the problem, but there was a need for just such a book as this, which is written by a scientist, a psychiatrist of

world renown, who possesses the eminent advantage of personal experience with all phases of the problem. What is presented is not a compilation of the literature on the subject, but the fascinating personal views of a man who is unusually apt in overcoming the difficulties of elucidating the sexual question in all its manifold aspects. The writer presents his opinion in an admirably candid way. Of necessity he has to dwell upon sexual aberrations and describe other repugnant features of sexual life, but every sentence bears the stamp of the truly scientific aim of the work. Forel designates the volume "a scientific, psychologic, hygienic and sociologic study for the educated." It is written in a language which can be understood and enjoyed by every educated person, man or woman, and the latter does not need to fear being shocked by the contents. It is dedicated to the author's wife.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY FOR 1905. Being a Yearly Digest of Scientific Progress and Authoritative Opinion on all Branches of Medicine and Surgery drawn from Journals, Monographs, and Text-Books of the Leading American and Foreign Authors and Investigators. Collected and arranged with critical editorial comments. Under the general editorial charge of George M. Gould. M. D. Philadelphia, New York, London: W. B. Saunders & Co.

It is entirely unnecessary to dwell at length on the many excellencies of this well known year-book. Suffice it to say that the volumes before us maintain, and in places excel, the high standard of excellence set by previous issues.

Not a little is added to the attractiveness and worth of the volumes by the numerous illustrations which have been selected with great judgment and care. It can hardly be said that the articles are all of equal merit, ophthalmology, for instance, having seemingly been slighted with respect both to amount of matter and number of critical comments.

But in presence of so much that is praiseworthy it were perhaps invidious to cavil at minor shortcomings. We can heartily recommend these volumes to the busy specialist or general practitioner who desires to keep in touch with the advances in all domains of medical endeavor.

INTRODUCTION A L'ETUDE CLINIQUE ET LA PRATIQUE DES ACCOUCHEMENTS. Par le Professeur L. H. FARABEUF et le Docteur HENRY VARNIER. Preface du Professeur A. Pinard. 362 Figures. Nouvelle Edition, Revue et Corrige'e. Paris: Georges Steinheil, Editeur. 1904.

Ever since its first appearance in 1891 this work was accorded a distinct place in the obstetrical literature of Europe. Farabeuf's splendid diagrammatic illustrations of the fetal positions and presentations, of the mechanism of labor and of the two chief obstetrical operations, version and forceps, have become classic and are copied in almost all text-books of the world. The first half of this volume deals with that part of obstetrics which as a rule in American text-books is termed "Physiology of Labor," while the second half contains a remarkably clear description of version, extraction and the application of the forceps.

A perusal of this work will prove of incalculable value especially to teachers of obstetrics.

DIE FRAU ALS MUTTER. Von Dr. HANS MEYER. Second edition. Published by Ferdinand Enke. Stuttgart. Price, Mks. 3.60.

This little volume has been prepared by the author, a teacher of obstetrics in the University of Zuerich, "to instruct and to quiet" the young mother who so often with dread instead of joy looks forward to the appearance of her first born, due to the combined effect of ignorance and misinformation.

The book is excellently written, and presents up-to-date teaching in a language which can be easily understood by every intelligent woman.

THE PSYCHIC TREATMENT OF NERVOUS DISORDERS. By Dr. PAUL DuBOIS, Professor of Neuropathology. University of Berne. Translated by Smith Ely Jelliffe, M. D., Ph. D., and William A. White, M. D. 8vo., cloth; 471 pages. Price, \$3.00 net. Funk & Wagnalls Company: New York and London. 1905.

This English translation by Jelliffe and White of DuBois' well-known book deserves to receive in this country the same degree of popularity it met with in France. It is a book that many have been waiting for. It presents in detail the methods of one of the most skillful advocates of what may be termed mental therapeutics, meaning by that, the understanding and the use of methods aimed to correct and educate and to persuade without the use of anything mystifying, nor of what is usually termed "suggestive." The book consists of a psychological introduction, written in a simple and easily understood manner, upon which the author is supposed to base his psychotherapy. This introduction is interesting, not on this account, but because it is so pleasingly written, and because it contains so much evidence that the author regards his psychology as a thing lying close to the every-day working plan of a neurologist. This attitude is a safe and hopeful one, at any rate, even if it does not tend to supply new psychological data. Of course it is easily seen that, even with all the author's attempts at explanation objectively, the fact is impressed more and more upon the reader that, in the main, the author has been successful in his treatment, not because his methods are based upon a correct appreciation of the psychology of the thing, but because his personality contains within itself just those elements which make his patients want to do as he says, and forces them to see their cases in the light he wishes them to do. In other words, the therapy advocated in this book is DuBois himself. Once understood, this makes the book even more attractive than before, and gives it a value which the author himself probably does not quite appreciate. The description of cases is clear, and we really are able to put ourselves in the place of the patient as well as the physician, very often. This book is recommended to all neurologists, as well as to those who have any sort of interest in the more advanced methods in use in neurological therapeutics. Especially should those read this book who still believe in the force of mystery, in the terrors of the large spark, and in the buzz of the static machine. To such, the truth and frankness of this book will appeal as an interesting variation to the self-deception which a long use of their methods produces. The translation is very well done, and adds much to the delight which one feels in reading the book.

OPHTHALMIC NEURO-MYOLOGY. A Study of the Normal and Abnormal Actions of the Ocular Muscles from the Brain Side of the Question. By G. C. SAVAGE, M. D., Professor of Ophthalmology in the Medical Department of Vanderbilt University. 39 full-page plates and 12 illustrative figures. Pp. 221. Published by the author. Nashville, Tenn.

Dr. Savage bases his thesis on the following hypothesis: "There are eight conjugate brain centers in the cortex by means of which the several versions are effected, and one conjugate center by which convergence is caused. These conjugate centers act alike on orthophoric and heterophoric eyes and when there is only one eye. Each of these is connected with two muscles, and the work done by the center and its muscles under the guidance of volition is normal work. The conjugate centers have no causal relationship with the heterophoric conditions, nor have they any power for correcting them.

There are twelve basal centers, each connected with only one muscle. If the eyes are emmetropic-orthophoric, these centers are forever at rest; but when there is any form of heterophoria, one or more of these centers must be ever active during all working hours. These centers do not cause heterophoria, but they stand ready to correct it. Under the guidance of the fusion faculty each basal center stands ready to act on its

muscle, whenever there is a condition that would cause diplopia. They may be called fusion centers." The author states in the preface that it has long been his desire "to help make the ocular muscle problem easy of solution." We fear that his hope in this respect is not destined to be realized through any illumination shed upon the subject by the work before us. Indeed, to our limited intelligence, it seems as if a veil of impenetrable darkness had been dropped between our eager gaze and the mystery of the ocular muscles. The author's imagination, untethered by the mere facts of anatomy and physiology, soars serenely in the cloudless heaven of speculation. It's tremendous fun—for the author—but rather wearing on the reader whose craving for one little bit of experimental proof remains from first to last unsatisfied.

PATHOLOGY AND MORBID ANATOMY. By T. HENRY GREEN, M. D., F. R. C. P. Tenth American, revised from the tenth English edition. Revised and enlarged by W. Cecil Bosanquet, M. A., M. D. Lea Brothers & Co., Philadelphia and New York. 1905.

Green's Pathology is too well known to require more than a few words in review. The new tenth edition, while enlarged and brought into accord with recent progress in pathology, has, on the whole, the same merits and the same faults as previous issues. Throughout the book the English fondness for definitions and for hard and fast statements is evident, and its text book style, while well calculated for the purpose of cramming for those examinations which form so important a feature of English medical life, seems less justified than elsewhere in a book for reference. On the other hand, the note of dogmatism is conspicuously absent. Where several theories are to be discussed, all are stated with fairness and without prejudice. Thus, in the discussion of the etiology of malignant tumors, the various theories are stated in some detail, the evidence pro and con in each case being discussed entertainingly and with absolute fairness. On the whole, however, the book will meet the needs of the medical student who desires a brief and clear-cut statement on any point, rather than those of the practitioner or pathologist who seeks for a detailed account of the latest views on pathologic matters. The absence of all reference to the literature still further limits its usefulness to the latter class of readers. With a few exceptions the illustrations seem crude indeed to us who have been rather spoilt by the magnificent plates with which many of our recent books on pathology are so lavishly provided.

CLINICAL METHODS, A GUIDE TO THE PRACTICAL STUDY OF MEDICINE. By ROBERT HUTCHISON, M. D., F. R. C. P., and HARRY RAINY, M. A., F. R. C. P., F. R. S. E. Ninth edition. W. T. Keener & Co., Chicago. 1905.

As the sub-title indicates, this book is designed for the use of medical students, and if viewed from the standpoint of the ordinary quiz compend, it deserves all praise. It is interestingly written, and contains the essentials of laboratory medicine clearly set forth. On the other hand, its value as a book of reference for the physician is limited. Not being a marvel of condensation like Klemperer's little book, it attains conciseness at the expense of completeness. It contains most of the matters that the ordinary physician may be expected to know. When, however, he desires to make use of one of the less usual tests or methods of examination, and desires information on the point, he will probably find scant satisfaction here.

THE VERMIFORM APPENDIX AND ITS DISEASES. By HOWARD A. KELLY, A. B., M. D., and E. HURDON, M. D. Philadelphia and London: W. B. Saunders & Company. Price, \$10.00

This volume of 827 pages constitutes by far the most exhaustive work which has ever appeared upon this subject. The three chapters on the history are absolutely classical, and leave nothing to be desired. The four chapters on the anatomy are, without doubt, the best things of their kind which have appeared, and represent not only considerable new work, but an elegance in illustrating the same, which is found only at the hands of Max Broedel. As might be expected, chapters 29-30 on the relationship of appendi-

citis, gynecology and obstetrics, are masters of their kind. In fact, the criticism of this work most frequently heard from surgeons is, that the illustrious author's point of view, as well as the material at his command, biases him somewhat in his treatment of the subject. Nothing seems to have been neglected which has any bearing on appendicitis, as will be noted when the reader sees that the last chapter is on the medico-legal aspects of such cases.

ABDOMINAL OPERATIONS. By B. G. A. MOYNIHAN, M. S. (London), F. R. C. S., Senior Assistant Surgeon to Leeds General Infirmary, England. Octavo of 695 pages, with 250 original illustrations. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, \$7.00 net.

The amount of abdominal work which this author has done, and the number of original procedures in this field for which we have to thank him, make particularly valuable a volume which is naturally supposed to embrace his knowledge and experience. The volume is one of 695 pages and is illustrated, as so many English works are, with the desire rather for the truth of detail than for any particular artistic merit. The five sections into which the volume is divided deal, first, with General Considerations; second, Operations upon the Stomach; third, Operations on the Intestines; fourth, Operations Upon the Liver; fifth, Diseases of the Pancreas and Spleen. As will be seen, certain intra-abdominal organs are not treated, hence the title is in a measure misleading. It is interesting to note that the author gives mechanical appliances, such as the Murphy button, little or no place in stomach and intestinal surgery. This is all the more surprising since his earlier master, Mayo Robson, devised and still uses the well-known bone bobbin. Moynihan gives more than usual attention to the procedures which he has invented and to the forms of operations which he uses, only one of which, his gastroenterostomy, if no other procedure were mentioned, would make the book worth many times its price.

A TREATISE ON DIAGNOSTIC METHODS OF EXAMINATION. By PROF. DR. HERMANN SAHLI. Edited with editions by Francis P. Kinnicutt, M. D., and Nathaniel Bowditch Potter, M. D. Authorized translation from the fourth German edition. Philadelphia and London: W. B. Saunders and Co., 1905.

A translation of Prof. Sahli's monumental *Lehrbuch der klinischen Untersuchungs-Methoden* should meet with hearty welcome at the hands of English-speaking physicians. In company, perhaps, with one or two other similar works, it ranks easily at the head of text-books on clinical methods. The physician and the laboratory worker will equally find it indispensable for reference, and it is difficult to say whether higher praise should be accorded the writer's clear presentation of methods of physical or of laboratory diagnosis. The illustrations are uniformly excellent and usually original. It is a pity that the use of thick, heavy paper should have resulted in a bulky volume. The modern thin but opaque paper used by many English and American publishers would have made it a light, handy volume, without any sacrifice of essentials.

THE NATIONAL STANDARD DISPENSATORY. Containing the Natural History, Chemistry, Pharmacy, Actions and Uses of Medicines, including those recognized in the Pharmacopœias of the United States, Great Britain and Germany, with numerous references to other Foreign Pharmacopœias. In accordance with the United States Pharmacopœia, eighth decennial revision of 1905 by authorization of the Convention. By HOBART AMORY HARE, B. Sc., M. D., Professor of Therapeutics in the Jefferson Medical College, Member of the Committee of Revision of the U. S. P.; CHARLES CASPARI, JR., Ph. G., Phar. D.,

Professor of Pharmacy in the Maryland College of Pharmacy, Baltimore, Member of the Committee of Revision of the U. S. P.; and HENRY H. RUSBY, M. D., Professor of Botany and Materia Medica in the College of Pharmacy of the City of New York, Member of the Committee of Revision of the U. S. P. Imperial octavo, 1858 pages, 478 engravings. Cloth, \$7.25 net; leather, \$8.00 net. Thumb-index, 50 cents extra. Lea Brothers & Co., Publishers, Philadelphia and New York. 1905.

To practitioners of medicine and pharmacy this new work of the highest authority is of great importance. It contains, by authorization of the Convention, every article in the new edition of the U. S. Pharmacopœia, together with such explanatory notes and instructions as are necessary to a full understanding of the brief official statements. In addition it covers the essentials of the latest foreign Pharmacopœias, and the very important domain of unofficial drugs and preparations so largely in use. Of its authors, Dr. Rusby has treated the department of Pharmacognosy, including the minor as well as the major drugs of the entire globe, a service never before rendered; Prof. Caspari deals with Pharmacy, giving full information regarding methods and products, with descriptions and explanations of the most approved apparatus and tests; and Dr. Hare has written the section on Medical Action and Uses, giving a direct and compact presentation of modern therapeutics. An Appendix of 60 pages contains all necessary tables, formulas, tests, etc., for practical use. The General Index, of about 90 pages, contains full reference to every page in the text, making it a repertory of the world's knowledge of drugs; and the Therapeutical Index, of about 40 pages, contains, under the name of each disease, references to all the medicines employed in its treatment, leading the reader to the points in the text where the conditions indicating their employment and choice will be found. In a word, the National Standard Dispensatory is a new, practical and authoritative work containing information on all substances used in medicine and pharmacy at the present day. The volume is embellished with 478 new and instructive engravings in the text.

CLINICAL TREATISES ON THE PATHOLOGY AND THERAPY OF DISORDERS OF METABOLISM AND NUTRITION. Part VI., Drink Reduction (Thirst Cures), Particularly in Obesity. New York: E. B. Treat & Co. By PROF. CARL VON NOORDEN.

This is one of a series of articles on Metabolism by Prof. von Noorden, which has been translated into English under the direction of Boardman Reed, M. D. Like all of the author's work on this subject, it is a most satisfactory presentation of the subject.

DISEASES OF THE HEART. A Clinical Text-Book for the Use of Students and Practitioners of Medicine. By EDMUND HENRY COLBECK. Second edition, revised and enlarged. W. T. Keener, Chicago. 1905.

This little volume is intended to present the clinical side of the subject of heart disease in a form suitable to the requirements of students and practitioners of medicine. It seems to fulfill the requirements quite well. To this volume have been added the consideration of mechanical heart strain, the Stokes-Adams syndrome, and the instrumental determination of blood pressure. The latter subject, however, has not received the consideration which it seems to merit.

BAKTERIOLOGISCHES TASCHENBÜCH. VON DR. RUDOLF ABEL, G. AUFLAGE. Würzburg: A. Stuber.

The new edition of Abel's little book deserves the same recommendation that was given to the former editions. Its character is not changed; the addition of some recently published methods of procedures has brought it up to date.

INTERSTATE MEDICAL JOURNAL.

VOL. XII.

DECEMBER, 1905.

No. 12.

ORIGINAL ARTICLES.

A PLEA FOR EARLY OPERATION IN CANCER OF THE STOMACH.*

By N. B. CARSON, M. D., St. Louis.

Naturally, the first questions in the consideration of this subject to suggest themselves are, whether cancer is curable, and, if so, can that cure be effected by surgery. In answer to the first part of the question, we have in the literature a number of well-authenticated cases in the human being of spontaneous recovery from true cancer to prove conclusively that it can be cured. In addition to this, we have the report of Gaylord, Clowes and Barstack, in which they report the spontaneous recovery of white mice from cancer, and the cure of others brought about by the injection of the serum from these mice, with the same result in still others injected with the serum from those so cured.

That cancer is a local disease is, I believe, generally accepted, and when it appears at distant sites as a metastasis, or returns in the neighborhood of parts after removal, it has either been carried to these remote situations by the circulation or lymphatics, or it has not been entirely removed.

Granting that cancer is of local origin and is curable, the question naturally arises, how can this cure be accomplished?

Up to the present time no blood or serum treatment has proved effectual, so we look to surgery.

Since Peon in 1879 attempted to remove a cancer of the pylorus, and which was first accomplished successfully by Billroth in 1881, and since Connor, of Cincinnati, made the first attempt to remove the entire organ, the patient dying on the table, and which was successfully done by Schlatter a little later, his patient living fourteen months, much has been effected by surgery, as is shown by the steadily decreasing mortality in operations for the relief of this otherwise hopeless disease; and when we review the brilliant work done in this direction by Mikulicz, Mayo Robson, Moynihan, W. Mayo, and others too numerous to mention, we cannot but feel convinced that through surgery only can patients afflicted with this disease be benefited unless the hopes of Gaylord

*Read at the meeting of the St. Louis Surgical Society, April 12, 1905.

are realized, who says: "Although our work thus far has shown us the great difficulties which will undoubtedly be encountered, it is, perhaps, not too much to hope that a careful analysis of the facts obtained in our experimentation on mice may ultimately lead to a practical application of these facts, with a solution of the question of the curability of cancer in the human being."

I have watched with much interest the development of operations upon the stomach for the cure of cancer since their inception, and I cannot do better than quote Mayo Robson when he says: "It is not so long a time since patients with cancer of the stomach were from the first condemned as hopeless, and I can trace in my own mind very clearly the changes of views that have occurred in the prognosis and treatment of these very serious cases. In the seventies, any one with carcinoma of the stomach was given up as hopeless."

How different the outlook is today, thanks to the surgeon, and while the results are not all that can be desired, still, when we review the work which has already been done, we feel encouraged to believe that, with the aid of the internist, advising early exploratory operation in stomach cases with such symptoms as cause him to suspect cancer, I cannot but feel the results will ultimately fully realize our hopes, and by early removal of the part of the organ involved many lives will be saved. In a study of the literature of this subject, we find that surgical operations upon the stomach are of early date; the first, a gastrotomy, was done by Florian Mathis at Prague in 1602. Since that time, up to the present, many operations, from simple gastrotomy for the removal of foreign bodies to a complete removal of the entire organ for cancer, have been done with a constantly decreasing mortality. Since Wolfier did the first successful gastroenterostomy in 1881, we see the mortality reduced from 65.71, until now Mayo Robson says he can point to a long series of posterior gastroenterostomies in simple diseases of the stomach of 3.9, and in cancer of only 5 per cent.

He, moreover, states that the operation of partial gastrectomy in cancer is one that is attended with much more encouraging success, immediate or remote, than is generally recognized.

A consideration of the subject prompts the following questions: First—will a palliative operation upon the stomach prolong life? Second—will gastrectomy, partial or complete, prolong life! And is it, with its present large mortality of 25 per cent., a justifiable operation?

In answer to the first, we see it generally stated that the average duration of life for a person afflicted with cancer of the stomach without operation is about eighteen months. From my own experience, while I have kept no tabulated records, I should say it was much less.

Kroenlein and Mikulicz, who kept an accurate record of their cases, place the average length of life without operation at twelve and one-half and eleven and one-fifth months respectively, while those upon

whom they did gastroenterostomy lived fifteen and one-half and fourteen months respectively. I have done gastroenterostomy five times for cancer, three patients dying in the first week, all males, while two females lived, one not quite a year, dying from the disease extending and closing the opening into the bowel, while the other lived nearly one year and a half, dying from exhaustion, brought about by vomiting, due to a non-malignant closure of the anastomotic opening, the pylorus having already been apparently closed by the disease. In the first three cases the operation was done as a "dernier resort" to relieve the distressing symptom and make life more comfortable while it lasted In the two last cases life was without doubt prolonged several months by the operation and made tolerable by a relief of vomiting and other distressing symptoms until a short time before death.

In answer to the second question, Kroenlein reported fifty partial gastrectomies with fourteen deaths, a mortality of 28 per cent. Mikulicz reports one hundred partial and three complete gastrectomies with thirty-seven deaths. In the last three years Mikulicz has reduced his mortality to 25 per cent. Of Kroenlein's gastrectomies, thirteen were alive at the time of report. Of these one is alive in the eighth year, one is alive in the fourth year, two in the third year, three in the second year and six in the first year.

Of Mikulicz's cases, twenty were still alive between six months and eight and one-fourth years after operation. Longer than one year, seventeen are alive; longer than two years, ten are alive; longer than three and one-half years, four are alive.

MacDonald collected forty-three cases cured by operation which could not be disputed. Murphy collected one hundred and eighty-nine cases with twenty-six deaths. Of these, seventeen survived three years—eight per cent. This, after three years, was reduced to five per cent. by recurrence.

To these can be added three cases of Tuholske's, with one death and two recoveries; and also one case of almost complete gastrectomy by Mayo Robson, which, after more than two years, is in complete and perfect health.

Mayo reports forty-three cases of radical operation, all but two of whom survived the operation, living beyond the year. One lived three years and seven months, and several were alive and well more than three years after.

In Kroenlein's cases the average length of life was twenty-six and one-half months, or fourteen months over unoperated cases.

In Mikulicz's cases the average length of life was twenty-four and one-half months, or one and one-third years over unoperated cases.

In addition to the above, I have done the radical operation three times for cancer; in one case the patient lived eight days after gastrectomy,

dying from sepsis. In the second case, two-thirds of the stomach was removed with four inches of the transverse colon. In this case there was an opening between the colon and stomach, and the patient was vomiting solid feces. Death resulted in ten hours from shock.

In the third case, four-fifths of the stomach and five inches or more of the transverse colon was resected on the 3d of October, 1904. The patient made a good recovery, left the hospital in less than three weeks, and is in the enjoyment of good health.

These statistics answer without further consideration this last question, and prove to my mind very conclusively that, in spite of the large mortality, gastrectomy (partial or complete) is a justifiable operation; and I feel assured that, in the hands of skilled operators, with improved technique, the mortality will be still further reduced, especially if the internist will aid us to see cases early, and will join with us in advising exploratory incision to make a diagnosis.

In order to study carefully the symptoms of cancer of the stomach with the hope that I might find one or more symptoms that would aid in the early diagnosis of this disease, I have gone over the records of the City Hospital and the St. Louis Mullanphy Hospital covering the past two years, and find seventeen cases of undoubted cancer of the stomach. In these seventeen cases I found that the disease had been noticed from seven weeks to three years, and that thirteen were males and four females. Three suffered pain not influenced by the presence of food, thirteen by the presence of food, while one experienced no pain.

Obstinate constipation was a marked feature in all but two, who suffered from diarrhea. Vomiting was present in all but one, belching was noted in six, tumor was felt in ten, blood was noticed in five cases, poorly digested food in seven cases. HCl was found four times and not found eight times. Lactic acid was present five times, absent seven times. A marked loss of appetite was noted in all but one case. Boas-Oppler bacillus was noted twice. Loss of weight was a marked symptom in all cases. Temperature increase was noticed in two cases, while a subnormal temperature was present in several others. Cachexia was a marked symptom in most all cases. One at present in the hospital presents the appearance of pernicious anemia; a leucocytosis 13,750; the red cells stain poorly, vary much in size, with a small amount of hemoglobin in each cell, a total of only fifteen per cent.

In all of these cases the disease was advanced and the diagnosis certain, and most of them died in the hospital or left the hospital to go home to die. One case, on which Dr. Brown did a posterior gastroenterostomy, the patient lived comfortably four months.

The only point worthy of notice in the above cases, and which agrees with the observations of others, is the presence of HCl and the absence of lactic acid in a number of these cases, showing the utter unreliability of this symptom as an aid to the diagnosis of cancer of the stomach.

Now are there any symptoms or groups of symptoms that will enable us to make an early diagnosis?

Fenwick says there are few diseases which at an early period of the course are more difficult to recognize than cancer of the stomach. From the mode of onset little information is to be gained, as in most cases the commencement is insidious, and when sudden the symptoms are attributed to some indiscretion of diet.

Pain and hematemesis are present in so many cases that we might reasonably conclude that they would materially aid us in the diagnosis; but we have seen that both symptoms are present only after the disease is well advanced, and that while in the majority of cases pain is certainly the most prominent of local symptoms, it is occasionally conspicuous by its absence, not only in the commencement, but throughout the entire course of the malady. Vomiting is another prominent symptom, and, according to Brinton, occurs in $87\frac{1}{2}$ per cent. of all gastric cancers. Still it is of no material value as an aid in the early diagnosis, as it does not generally occur in cancer until there is obstruction at the pylorus, or until the movements of the stomach are interfered with by the growth, and its presence in so many other stomach diseases obscures its value on that account.

Fenwick thinks one of the earliest symptoms which accompanies a cancerous growth of the stomach is gradual loss of strength. Although inclined to work, the patient experiences a sense of weariness and lassitude which makes him irritable and restless, and eventually renders him entirely unfit for work.

Another early symptom is loss of flesh which is present in almost all cases, and while it may not be marked, it is generally noted early and may be considered one of the most reliable. Other early symptoms which may not attract the attention they deserve are minor ones arising from disturbance of the digestive organs. The most important of these are anorexia, dysphagia, flatulence, nausea, pyrosis and constipation (Fenwick.) When we have these symptoms with loss of strength and flesh, in a person of over forty years of age, or even in younger persons, when they resist treatment we should advise exploratory operation although all other symptoms are wanting.

Another symptom upon which I place a great deal of importance, appearing early in the disease, is water-brash. I have noticed this in so many cases where cancer has afterward developed that I place much reliance upon it as an early symptom.

At first much was expected from an examination of the blood, but like all other aids it proved disappointing, especially in the early stages.

Robson and Moynihan believe the blood, as a rule, shows the changes found in secondary anemia. Beyond this the information given by an examination of the blood is of little value. Krokeiwicz found digestive leucocytosis frequently. He states also that he has found no change in

the red blood corpuscles, while Hartmann and Sithol believe that the presence of cancer of the stomach is indicated by well marked association of decided anemia with decided leucocytosis. Anemia is marked less by the diminished number of globules, first, by the diminished proportion of hemoglobin in the globules, second, by irregularity in the form of the globules, indicating a profound modification of the elasticity and texture of the red globules, and third, by inequality in the size of those globules that are not misshapen.

The leucocytosis, to have any value as a symptomatic sign, should affect especially the mononucleated cells. If the normal number of white corpuscles is reckoned at 7,000 per cubic millimeter of blood, nearly 60 per cent. of cases of gastric cancer exhibit an excess (Fenwick.)

In a number of our series of seventeen cases we found a leucocytic count as low as 3,000 per cubic millimeter. These, however, were all in far advanced cases.

Digestion leucocytosis, while present in many cases, according to Osler and McCrae, is said by Mueller to usually fail.

The examination of the stomach contents has also been disappointing. Although the absence of hydrochloric acid and the presence of lactic acid are generally indicative of stomach cancer, many simple inflammatory conditions show the same absence of the one and the presence of the other.

Bacilli, when present, are also useful in clearing up a doubtful diagnosis, but unfortunately like other symptoms, they appear late and are only confirmatory. The most important is the Oppler-Boas bacillus. Kaufman found it present in nineteen out of twenty cases; Hemater found it in fourteen out of sixteen. In our seventeen cases it was noted only twice. Dr. H. Ehret, of Strasburg, reports a new bacillus,* the bacillus filiformis, found first by Boas, the presence of which when in large numbers during the quiescent stage, is pathognomonic of cancer.

From a study of the symptoms as presented we must conclude that there is no one symptom or set of symptoms that will enable us to make an early certain diagnosis, so that we have to resort to an exploratory operation to confirm an already strong suspicion. I will again quote from the admirable work of Robson and Moynihan in which they say "we feel therefore compelled very strongly to advocate in all cases, where there is a doubt, an exploratory operation. In thus advising, we would still impress upon both physicians and surgeons the urgent need of the most painstaking and fullest examination in the hope that some result from their labors may, by establishing the criterion, thereby do away with the need of an exploratory operation. Though such careful examination is absolutely essential, it should not be unduly prolonged. To await the development of a tumor before consenting to a diagnosis

* Dr. Ehret claims this to differ from Boas-Oppler bacillus.

of a maglignant disease and advising operation, is to prove one's self in ignorance of the real issues at stake. Cancer of the stomach should be dealt with surgically before a tumor is clinically reconizable. In this alone lies our hope for successful treatment, and it may also become means of establishing an early diagnosis."

In the recent admirable work on cancer of the stomach by Osler and McCrae the following statements are made: "The important aid of an exploratory operation should be more frequently advised. The risk is comparatively slight, and is much less than that of an undiagnosed neoplasm. In a suspected case, when, under treatment, there is no improvement in a few weeks, an exploratory operation is justifiable."

"The exploratory examination, however, does not give information that is infallible. Several observers, Czerny, ourselves and others, have recorded cases where malignant disease was dignosed in which the event proved the tumor to have been simple inflammatory thickening around a chronic ulcer. Such cases, however, are exeptional, and only afford additional support of our advocacy of the earliest possible exploration."—Mayo.

The following very instructive case, which occurred in my practice, agrees with the above statement:

The patient, a slightly built man of forty-seven years of age, had for three years past suffered from indigestion, spitting up every morning large quantities of mucus. He had vomited only occasionally; had also suffered more or less during this period from water-brash. Had some pain during this time, but this symptom had not been marked until recently. About a week before I saw him he had a paroxysm of pain which was very severe, lasting twenty-four hours. In two months he lost twenty-five pounds of flesh, and as he had never weighed over 150 pounds, this loss was very apparent. He had suffered pain upon taking food and upon the introduction of very hot or cold substances. No examination of the blood was made in this case. Examination of the stomach contents one hour after an Ewald meal yielded twenty-one ounces of coffee grounds. Contents were withdrawn (poorly digested), showing atony of the stomach, with a total acidity of 80 per cent. hydrochloric acid, 40 per cent. lactic acid trace. The microscope showed starch cells, sarcinæ and bacteria. No Boas-Oppler bacilli were found.

With the symptoms as given and the examination of the stomach contents, together with the presence of a freely movable tumor about the size of an egg at the pyloric extremity of the stomach, we were led to diagnose cancer at the site of an old ulcer. We were led to this conclusion also from the fact that while the patient had been under the treatment of some of our best internists, no benefit had resulted.

An operation was advised and accepted by the patient. Upon opening the abdomen a large mass was found adherent to the anterior abdominal wall, which involved one-third of the pyloric end of the stom-

ach, with a perforation about one-half inch in diameter on the upper surface.

This mass was hard and indurated, and was thickest and most marked over the lesser curvature. The glands of the lesser curvature were extensively involved, while those about the pylorus over the greater curvature only were involved. The lower end of the organ, well beyond the disease, was removed, and the jejunum united to the lower end of the stomach. The patient stood the operation well, and did well until the third day, when he sank rapidly, and died from gangrene of the omentum.

Upon examination of the part removed, the walls were found hard and indurated and about one inch thick. Upon the upper anterior surface was a large, round ulcer about two and a half inches in diameter, perforated in the center. This, upon being subjected to microscopic examination, proved to be purely inflammatory.

This shows that we are not able in all cases to determine the character of the growth, although it may be plainly visible. Even had we been able to make out positively the character of the lesion, still partial gastrectomy was the only procedure to follow, not only on account of the perforation and the extent of the ulcer and the impossibility of closing it, but on account of the consequent cicatricial changes which would necessarily result where so much tissue was involved.

IMPRESSIONS FROM A CURSORY VIEW OF SOME JAPANESE HOSPITALS.*

BY FRANK A. GLASGOW, M. D., St. Louis, Mo.

The first hospital which I visited was the city hospital of Nagoya. Nagoya is a city of several hundred thousand inhabitants.

A note from the hotel proprietor, stating that I wished to see the hospital, was all that I required.

After leaving my shoes at the door and putting on a pair of slippers, I was conducted into a waiting room and served with tea.

After waiting some minutes, a very courteous physician made his appearance and I informed him in German and English of my object in visiting the hospital. Apparently he guessed at my meaning, for an hour later they produced an interpreter, who asked me if I was sick and wanted to enter the hospital.

This doctor, in company with two others, showed me the hospital.

It was infinitely more poverty-stricken in appearance than our old city hospital (happily not now in use).

*Read before the St. Louis Surgical Society, October 18, 1905.

You could see everywhere what they had to contend with, difficulties such as we do not dream of. They had several classes of accommodations. The first-class would be our third.

They used beds, as they did in many of the other hospitals, as one doctor in another hospital explained to me that it was easier to handle a patient on a bed than on the floor. However clean such an old rattle-trap of a building should be, it would not look clean.

The only method of heating the rooms, and the same was true in all of the hospitals which I visited, was by means of vases containing charcoal. The bathtubs were of unpainted wood, the surgical apparatus of the operating rooms of the crudest.

I was taken into one surgical operating room where the surgeon was repairing two severed tendons on the anterior surface of the ankle.

The handling of sponges and instruments, and the cleanliness displayed, was everything that one could wish. The whole anterior surface of the ankle and upper part of the dorsum of the foot had had all of the tendons, nerves and muscles dissected out beautifully. It would have reflected credit on a dissecting room, but I did not think it exactly the proper thing to do in order to unite two severed tendons. They dragged me away before they closed up the wound, but not before I saw the surgeon sew the severed ends. I am not a general surgeon, so may be wrong in my ideas, but I do not believe that constricting half of each of the severed tendons with each of three ligatures is conducive to good and permanent union.

This cuts off the entire circulation of the ends of the tendon. Silk was used.

I was shown the laboratory. The doctor in the pathological department spoke German, and showed me many specimens. They are preserved in alcohol.

I tried to get them to show me the bacillus pests, but unfortunately I called it plague, and they did not understand me. They showed me some bacillus, but I have no idea what it was, as we had left our German-speaking doctor in the pathological laboratory. They had a very extensive library of German works. Very few English.

There was a medical school connected with the hospital, and they showed the class rooms. It is their custom to make a very accurate drawing on the blackboard of any surgical case they intend operating on, and also a drawing of what they intend doing. A description of the operation is written on the board, probably copied from the text-book and the name of the authority quoted. Colored chalk is used and much skill was displayed in those drawings, which were still on the boards. I was probably two and a half hours in the hospital and was shown every courtesy.

In Tokio I visited the Shibuya Hospital without a permit and was very courteously shown around by the officers in charge.

The hospital is mostly an extemporaneous building consisting of many detached one-story buildings or wards, very roughly made. The beds were of the knock-down type of plain boards. The surgical operating rooms shown were furnished in a primitive way, but with the usual appliances. I did not see the steam sterilizer, but saw the buckets for the gauze. There were large bottles for solutions, some china basins and an ancient table. Rough cement floor. There seemed to be no extraordinary attempt made for cleanliness. There were in another room upright wooden bathtubs. Altogether the outfit was such as one would improvise in the country.

I was shown two or three cases of beri beri. In these cases there was partial paralysis of the lower extremities. In one case anesthesia of the thighs. The doctor in charge informed me that they were very slow in recovering, requiring six months or a year. Formerly the percentage was very heavy in the army, but now since an improved dietary has been introduced, very few cases occur. He was inclined to think that fish ptomaine poisoning was as much a cause as lack of nitrogenous food, if not the chief factor.

The cases of beri beri seldom showed much fever, except perhaps in the beginning when there was also pain, as in peripheral neuritis. There was no disturbance of the mind unless the fever was high. Several interesting cases of paralysis due to gunshot wound of the spine were shown me. Although paresis and spinal irritation were shown, there seemed to be no intention of cutting down upon the trouble. In one case the bullet was still imbedded. In most of the cases the bullet passed through. I was shown a case of rough tumor of the mesentery, accompanied with tuberculosis of the lung, the tumor being probably tuberculous. They made free use of eggs in the dietary of the tuberculous, depending on these instead of cod-liver oil.

At the Toyama Hospital, which I entered by permit from the military authorities, I was shown around by Surgeon-Major Dr. Shimose, a relative of the inventor of the famous gun powder.

This hospital can accommodate 6,000 patients; mostly convalescents come here from the hospitals on the Inland Sea, so there is little operative work in proportion to the cases. This holds true of all of the Tokio military hospitals.

This accounts for the marvelous report which was promulgated in regard to the low mortality in the Tokio hospitals, which made the world think that the Japanese led the world in surgery. I was shown some gunshot wounds, several from above downwards, viz: from the inner angle of the eye to the roof the mouth. The opening in the roof had been very prettily closed. Another case where a broken jaw had united in a distorted position was shown. This had been sawed, wired and a splint of wood put between the teeth for three weeks with perfect result.

There were two cases of traumatic right subclavian aneurism which

had been operated upon. In one of them there was a return of pulsation.

I was informed that they generally operated before any softening of the bone took place.

The cases were divided in the hospital according to the part injured. In this department, injuries of the mouth, jaw, throat and larynx. Here the plastic surgery was done. They had a plaster cast taken before and after and preserved. Here I saw some cases of secondary paralysis, due to the contraction of scar tissue. These had been operated on, the scar tissue being removed. They had photographs showing the paralyzed condition, and also some taken after recovery.

They told me that they kept pictures of all cases. They certainly kept voluminous reports. In this department they fit teeth and plates. There was an eye department, apparently fitted with all necessary apparatus.

There is a skin department also. Major Shimose informed me that there was very little syphilis in Japan, but that the soldiers bring it back from Manchuria. The social evil has been regulated so long that the disease is comparatively rare. I was shown one hopeless case, where the bullet passed through the lower portion of the spine, completely severing the cord and causing complete paralysis of the pelvic contents and extremities. The poor fellow was nearly dead. There was one case where the bullet entered just above the left inguinal region and passed out just above the left kidney, near the spine. He was practically well. In another case the shot passed across the lower abdomen. It was healed, but the patient was ataxic in his lower extremities.

In one department there were many patients receiving massage, sixteen at one time. Each had a masseur, a convalescent, probably. The eight on one side of the room all commenced at the foot, at the word of command, and worked upwards. On the other side of the room they began at the hand, all ceasing simultaneously on command. This massage was used in cases of swollen and stiff joints after injuries, and seemed a very useful adjunct to the surgeon's work.

The severely wounded we did not disturb, but there were not many such.

We saw one poor fellow who seemed in perfect health, but he had lost both hands and feet from frost. He had remained out on the field for forty-eight hours before he was found.

The surgeon showed great sympathy, and regretted that they had neither the money nor skill for fashioning artificial limbs which we Americans had.

To end my trip, they took me outside into beautiful grounds to see some appliances devised by the surgeon in charge of the ward where we had seen the injured jaws.

These appliances were intended to render supple the various joints, and they seemed well calculated to serve their purpose. They were

crude, home-made affairs, far cruder than one would expect. There were two parallel bars for the arm and shoulder muscles. Next, a simple bar about two and a half feet high, over which the patient must lift first one leg, then the other.

There were six or seven steps up which the patient must go. Then four foot-pedals for exercising the knee and ankle.

There were four wheels made of common board about twelve inches in diameter. These were supported by an axle and had five holes around the axle in which the fingers were placed. This wheel was rotated back and forth as far as the muscles of the wrist and forearm could move it.

Five hollow, easily collapsible rubber balls about two and a half inches in diameter provided motion for the fingers and hand.

Four windlasses provided a rotating motion for the muscles of the shoulder.

I was surprised that they had no method of cooling the boiled water except letting it stand. The apparatus seemed to be thoroughly German and not of the latest.

They use soft soap, alcohol and bichloride as cleansing agents.

The Tokio Base Hospital and the University Hospital seem to be provided with all the most modern apparatus in the operating room. In the Tokio Base even the cold water was sterile.

There seems to be a disinclination on the part of the military authorities to allow foreigners to witness surgical work.

I was told at the war office that there was no objection to our visiting the hospitals; but they issue permits only for the afternoon when there are no operations.

I was probably inadvertently told that I could go to the Shibuya Hospital at 10:30 A. M., but as I expected and predicted, a note was brought by a special messenger from the war office advising me *not* to go to that hospital at that hour. Moreover, that there would be no operation worth seeing for ten days. If one was to take place they would notify me. Nevertheless, I went at that hour and received every courtesy, but I saw no operation:

The only operations which I saw or had any chance of seeing was at the University Hospital, through Dr. Shimose of the Shibuya, giving me a note to his brother who was in the gynecological department at the University Hospital.

The doctor in charge informed me that there would be two operations the next day. The one an ovariectomy and the other a hysterectomy for cancer. Unfortunately I was late for the first and was kept waiting until it was finished.

In operating on the cancerous uterus the operator first, after introducing a double-walled Ferguson's speculum, cauterized thoroughly the whole cervix.

Then he proceeded to remove the uterus by the abdominal route. He

applied forceps everywhere until he had the uterus completely removed. Then tied the vessels with silk and closed the peritoneum over the vagina. Sewed the parietal peritoneum and then passed sutures through all of the remaining structures of the abdominal wall out through the skin. He used silk. They do not use catgut as far as I could find out.

The operation was done very deliberately and carefully, and the only thing that I could criticise was the method of closing the abdominal wall. I am sorry to admit that many of our own confreres do as they did. They did not seem to understand me when I asked if they used the subcutaneous suture. We spoke in German. I did not see the surgical department of the University Hospital. I had a note from the doctor in the gynæcological department, but after keeping me waiting a long time, and having me remove my shoes, they told me to come back in the afternoon. I did not say "sayonara;" neither did I go back.

In some of the military hospitals I did not have to remove my shoes, neither did the surgeon in charge; but this seemed to be a special favor.

To finish, I will only remark that I was filled with amazement to see what the Japanese are doing with the very limited means at hand. Their records will prove invaluable, and fortunately they are keeping some of them in German. I believe that they are to a great extent imitating now, but this cannot continue long. They will be leading in the near future.

We hear that they will be limited in their achievements, because they have no inventive mind. Their achievement so far has been miraculous, and I see no reason for it to cease. They may be dispensing with foreign help too soon, perhaps.

I wish to note here a peculiarity of Japan which I have never seen elsewhere. That is, the almost total absence of the house fly. Even the fish stores, which you can smell across the street, are not infested. The greatest number of flies which I saw at one time in a fish store was eight, and they were on some moss. There is no buzzing to be heard in the trees as in this country. I ascribe this to the fact that there is nothing for them to breed in—almost no cattle or horses, and hence no manure heaps.

The human ordure is carried directly to the fields every day. The early morning odors of Japan's streets are not pleasant, neither are the odors of the rice fields.

From my inquiries I should judge that tuberculosis is not nearly as prevalent as in our country. Perhaps the half-clad condition in which they go about, exposing the body to the sunlight, may account for this immunity.

THE MATERNAL IMPRESSION SUPERSTITION, AND WHY IT SURVIVES.

By EDWIN TAYLOR SHELLY, M. D., Atchison, Kansas.

That the nervous and mental organization of the mother may influence the nutritional development of the fetus cannot be questioned—it may even at times interrupt gestation; but the doctrine of maternal impressions implies that a perfect similarity exists between the thing producing the impression and the mark or deformity produced.

The distribution of this superstition is world-wide, as unmistakable indications of its existence abound in such far apart regions as India, China, South America, Lapland, Western Asia, East Africa and—Philadelphia; and its antiquity is as great as its distribution is extensive. The theory at first probably existed only to explain the difference of color between the young of man and of animals; later, it was used to explain the appearance of naevi; still later, all fetal malformations were accounted for by this theory.

Prior to the fifteenth century, maternal impressions seem to have been most frequently those of admiration; seldom of fear or disgust. The first allusion to the effect of pictures and statues upon pregnant women was made, therefore, not in Boston, but in ancient Greece. The law of Lycurgus even compelled Spartan wives to look upon the representations of the strong and beautiful; but during the fifteenth, sixteenth and seventeenth centuries the belief that maternal impressions also caused fetal defects and monstrosities became universally prevalent. During that time no one ventured to dispute either aspect of the theory; but in 1727, Blondel, of England, wrote a volume in which he challenged the theory so vigorously and intelligently that he produced the profoundest impression upon medical opinion, not only in England, but throughout all Europe, so profound, indeed, that works in a similar strain appeared in Scotland, France, Germany, Russia and Italy.

During the nineteenth century an enormous amount of literature on the subject of maternal impressions appeared, displaying all degrees of belief in its efficacy. Nearly all teratologists the world over were against the theory, while medical men in general were more evenly divided in their opinions. For some unaccountable reason, nearly all American writers, except teratologists, accepted the doctrine. Ballantyne, in his recent superb work on Antenatal Pathology and Hygiene, declares that, from 1839, the year the "snake man" appeared, until 1900, one hundred and seventy papers, dealing with the maternal impression theory, were published in American journals, and that among its supporters were such eminent men as Fordyce Baker, Samuel C. Busey, Wm. Goodell, Matthew D. Mann, R. A. F. Penrose and A. F. King.

Is it not a curious psychologic phenomenon that men who know enough to write lucid, scientific chapters on the development of the embryo and

fetus, can defend and disseminate the ridiculous maternal impression superstition? And yet we know they do. In fact, not a single American text-book on obstetrics issued during the past five years and intended for medical students and physicians, combats this theory, but on the contrary, it is upheld in all of them, with one or two exceptions, in which the subject is not mentioned at all.

In the American text-book of Obstetrics (1903 edition) Prof. Edward P. Davis, of Philadelphia, says: "There is certainly more than mere coincidence in the fact of fright and shock and the subsequent malformations or marking of the fetus. The well-known 'elephant man' of England and the 'turtle man' exhibited in the United States, with other instances, are familiar evidences of this anomaly."

In the same work, Dr. R. C. Norris of Philadelphia declares: "A close study is convincing that there exists between the nervous system of the mother and the growing mental and physical organization of the fetus, an unknown influence which, in rare instances, does result in marking and malformation of the child."

Dr. Wm. A. N. Dorland of Philadelphia, in his Obstetric Text-book, winks at the subject in the following manner: "Unpleasant and painful scenes or impressions should be avoided, so that the possibility of some so-called maternal impressions may be avoided."

Prof. Barton Cooke Hirst of Philadelphia, in the latest edition of his Text-book of Obstetrics, says: "Maternal impressions may affect the embryo or fetus. . . . There are well authenticated cases of congenital defects or peculiarities which bear too startling a resemblance to the cause of the impression upon the mother during pregnancy, to be dismissed as mere coincidences. One of my patients, less than six weeks pregnant, was, upon one occasion, seized by the ear and dragged about the room by her enraged husband. The child born at term had a triangular piece lacking from the lobe of the corresponding ear. . . . Profound impressions upon the mother certainly influence the physical development of the offspring. . . . The horror of King James at the sight of a naked sword may well have had its origin in the murder of Rizzo before the eyes of the pregnant Queen Mary."

But Philadelphia does not contain all the maternal impressionists among "The Wise Men of the East."

Prof. J. Clifton Edgar of New York, in his Practice of Obstetrics, asserts: "Instances pointing to the connection between, or dependence of, congenital deformities, both physical and mental, upon maternal impressions, are too numerous to be completely dismissed as coincidences."

Prof. Charles Jewett of Brooklyn, in the Practice of Obstetrics by American authors, avers that "there is no doubt that the mental state (of the expectant mother), may be the cause of modification in the physical, the intellectual and the moral characteristics of her offspring."

In spite of these simple professions of faith in the impressionist creed

found in modern obstetric text-books, it would be very rash to assume that the ostensible authors of these books do not "know better." That these text-books are gotten up largely by hack compilers seems to be very strongly indicated by the fact that one of the above quotations—and not by any means the least Sairy-Gampish one of the lot—is thoroughly discredited by an excellent article in Appleton's Universal Cyclopedia and Atlas, over the signature of Barton Cooke Hirst, in which he refers to the maternal impression theory as a "superstition," as an "absurd explanation of a former age," and as an "irrational attempt to explain the anomalies or organization which occur in man."

To the credit of Dr. DeLee of Chicago and Dr. Joseph Brown Cooke of New York, each of whom is the author of an obstetric text-book for nurses, let it be said, that they completely repudiate this doctrine, Dr. Cooke's chapter on the subject being particularly clear and adequate. Unfortunately, however, very few medical men or medical students ever see a text-book for nurses, and we are, therefore, confronted with the dismal prospect that the medical profession will probably continue to get its information on this popular medical superstition from the old granny twaddle on the subject found in its own obstetric text-books.

The purpose of this paper does not require that it supply an explanation of why or how monsters develop, but it is important to know that modern teratologists have found that there is not a single malformation known to the human species that has not a corresponding malformation in the lower animals, both wild and domesticated. Malformations also occur among birds, reptiles and fishes, and even in crustaceans and insects. Analogous malformations also appear in the vegetable kingdom, where single and double monsters abound, developments which result from arrested, defective or excessive formative energy—and which even professors of obstetrics might hesitate to ascribe to the influence of maternal impressions.

The *post hoc ergo propter hoc* argument, of which the empiricist is so fond, must seem overwhelmingly indubitable and conclusive to the maternal impressionist mind. Given a case of violent shock or emotion in a pregnant woman, followed at birth by a fetal mark or deformity resembling the cause of the maternal shock, and, to the impressionist, the easiest explanation for the unwelcome occurrence appears to be the unpleasant maternal impression. The fact that this coincidence happens so rarely that the expected mark or deformity fails to appear at all in nine hundred and ninety-nine cases out of a thousand, in spite of the previous occurrence of the most profound maternal shocks or emotions, seems not to appeal very forcibly to him, and he must, perforce, enter the regions of the absurd in search of a theory to explain the coincidence.

Another thing that appears to escape the impressionist is the fact that very often, when the fetal deformity does occur, the mother cannot recall any shock or incident to which she can reasonably attribute the mal-

formation. Blondel* said, nearly two hundred years ago, that "there are so many odds against the imagination theory that the cases related in its favor can never overbalance those which are against it;" and that "they may be compared to an accidental hit of a dream, or the predictions of a fortune-teller, which now and then are accomplished." And these words are as true now as they were in 1727.

If deformities in the fetus are due to maternal impressions, what kind of an impression does it take to produce congenital malformation of the heart, kidneys, intestinal canal, or the abnormal distribution of blood-vessels?

If maternal impressions were one-tenth as potential as it is claimed they are, creatures in human form sufficiently depraved would long ago have established monstrosity "farms" for the purpose of supplying the side-shows and dime museums of the world with human freaks.

The prevalence today among medical men of the belief in this example of mummified folk-lore is, for several reasons, a serious reproach to our profession. In the first place, if most medical men can, in spite of all scientific opinion to the contrary, be satisfied with such a flimsy explanation for the occurrence of unusual natural phenomena as this theory supplies, the profession can hardly claim to possess very much of the scientific spirit with which we flatter ourselves it is so thoroughly imbued.

A second reason why the prevalence of this belief is a reproach to the profession, lies in the fact that it retards the development of antenatal pathology. Many an instructive case which should receive intelligent teratological investigation, simply affords the means for idle curiosity concerning the kind of mental processes which would result in such fetal accident, or it becomes lost to science because the reporter sees nothing in it beyond a resemblance to a rat or dog, or frog or snake, or to some fruit or vegetable.

A third, and the chief, reason why physicians should consider it a stigma on the profession to harbor this ridiculous belief, lies in the fact that its prevalence among them tends to fill many an expectant mother with the dread that she may, by something which she may inadvertently see, or hear, or feel, or desire, mark her unborn child. Of course, when impressionism leads the expectant mother only to indulge, to a greater extent than usual, her taste for music, books or works of art, the belief is nothing more than a harmless, introspective fad; but because of the fact that, too often, her days and nights are filled with thoughts of marks and monsters, the time has surely come to enter fervent protest against this crass belief—this hideous, lingering apparition of a starless night when Science slept.

* Quoted in Ballantyne's *Antenatal Pathology and Hygiene*.

EDITORIAL COMMENT.

SIR THOMAS BROWNE.

There are cogent and excellent reasons why the practitioner of today should honor the memory of this rarely modest country doctor who lived three hundred years ago and gave to the world the imperishable "*Religio Medici*."

Born at the beginning of the seventeenth century, living in a period in which one wild tumult succeeded another, when civil war, profound political upheaval and religious persecution were hopelessly entangled, Sir Thomas Browne's isolation would strike us as remarkable were we not the richer by one of the masterpieces of English prose, containing the strongest appeal, especially to the medical mind imbued, as it should be, with modernity, humanity and classicism. Buffon says, "*Le style est l'homme*." In no work which has survived are there stronger evidences of the verity of this truism than in the book which Sir Thomas Browne wrote at the age of thirty. We are not in accord with Coleridge's rather contemptuous estimate that "*Religio Medici*" "is a fine portrait of a handsome man in his best clothes," for the reason that we who are informed with the truth of our *Zeitgeist*—a spirit which proclaims the triumph of individualism in science, literature and art—recognize at once the limitation of the Coleridge criticism. The book is not the man on dress parade, but the quiet, unobtrusive student of human nature and classic lore, who reveals to us the secret springs of his inmost soul.

We see moreover, in the life of Sir Thomas Browne, that the making of a masterpiece is not dependent on contemporaneous production, for if ever a man lived at a time of literary fertility, it was Sir Thomas Browne. Aloofness was the keynote of his existence. He was intimate with Aristotle and Galen, but unimpressed by Shakespeare, who lived but one generation before, or by his contemporaries, John Milton, George Herbert or Henry Vaughan. Of Harvey he says, "His discovery I prefer to that of Columbus." In a letter he calls the execution of Charles I. "horrid murder," and he speaks of Cromwell as "an usurper." One who can speak of such epoch-making events as these with a brevity almost akin to indifference, gives evidence of a mental calm and philosophic tranquillity most surprising, but easily explained on reading his works. "*Religio Medici*" could not have been written by one less withdrawn from temporal influence.

Although this philosopher's mind was steeped in thought that preceded his age by hundreds of years, yet his mental processes were so distinctly modern that, despite the lapse of three hundred years since the publication of "*Religio Medici*" and "*Urn-Burial*," it is no exaggera-

tion to state that to him who reads—be he a poet like Cowper or a mere writer of ephemeral articles—Sir Thomas Browne's writings are an inexhaustible inspiration.

The following illustrates the quaintness of his thought: "The first shall be the elephant, whereof there generally passeth an opinion it hath no joints, and this absurdity is seconded with another, that being unable to lie down, it sleepeth against a tree. . . . Now herein methinks men much forget themselves, not well considering the absurdity of such assertions."



SIR THOMAS BROWNE.

Born October 19, 1605. Died October 19, 1682.

The following shows his powers of observation: "What is the use of dew-claws in dogs?"

And, on canine madness:

"Whether it holdeth not better at second hand than at first hand, so that if a dog bite a horse and that horse bite a man, the evil proves less considerable."

Were these observations accidental as a presage of evolution and immunity or did he see the faint glimmerings of the light that was to burst upon the scientific world of the nineteenth century?

As to those literary qualities which make his fame enduring, the sensitive critic is impressed by the cardinal points of supreme literary effort—lyricism, vitality and matchless choice of words. The felicity of phrase and quality of thought seizes upon us directly we read, and so

firmly are we held that we desire to read again, and feel that in so doing our minds are made better and are exalted by contact with the body, soul and spirit of art.

On dreams:

"If some have swooned, they may have also died in dreams, since death is but confirmed swooning. Whether Plato died in a dream, as some deliver, he must rise again to inform us. That some have never dreamed is as improbable as that some have never laughed. That children dream not the first half year; that men dream not in certain countries, with many more, are unto me sick men's dreams; dreams out of the ivory gate and visions before midnight."

"Urn-Burial:"

"But the iniquity of oblivion blindly scattereth her poppy and deals with the memory of men without distinction to merit perpetuity. Who can but pity the founder of the pyramids? . . . Who knows whether the best of men be known, or whether there be not more remarkable persons forgot than stand remembered in the known account of time? . . . Oblivion is not to be hired. The greater part must be content to be as though they had not been, to be found in the register of God, not in the record of man."

THE SO-CALLED FOURTH DISEASE.

Since the publication, by Clement Dukes in 1900, of his article on the so-called fourth disease, there has been a good deal of discussion as to the justification for the separation, as a clinical entity, of this fourth disease from scarlet, measles, and roetheln. This exanthem, also known as Dukes-Filatow's disease, occurs in children, as a rule. The rash at times resembles that of scarlet, at times is more like that of measles. Constitutional symptoms are either wholly wanting, or are very slight indeed. There is very little preliminary coryza, very little angina, fever is never marked; Koplik spots are not found, and the tongue is not characteristic. The rash ordinarily does not last over a day or a day and a half, and is not followed by desquamation.

The general trend of opinion, with reference to the condition to-day, is that it is to be regarded as a mild atypical form of roetheln. In a recent review of this subject*, the view is expressed that this condition is to be regarded as a rubella scarlatinosa, or a rubella morbillosa. It was possible for the author to fix the period of incubation exactly in two cases of his series, viz., at eighteen and twenty days. In three cases, the adenitis, so commonly seen in rubella, was present to a marked degree. It has been shown repeatedly in the study of epidemics of rubella, that this affection at times takes on a scarlatinal, at times a measly form, and it appears from the weight of evidence that cases of so-called fourth disease really belong to one or other of these types.

There is more than a mere matter of nomenclature involved in the question. The differential diagnosis of the acute exanthemata of childhood presents exceedingly great difficulties at times, and these difficulties ought not be unnecessarily increased. The tendency of various diseases to manifest themselves in atypical, and at times widely different forms, is well recognized, and there does not seem to be any occasion for the attempt to separate these aberrant types as distinct forms of disease.

* Arch. de Med. des Enf., October, 1905.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

The Individual Dietetic Treatment of Gout.—V. NOORDEN and SCHLIEP (*Berliner Klinische Wochenschrift*, No. 41, 1905) have endeavored to determine the tolerance for purin bodies in gout, as they have for carbohydrates in diabetes. They begin with a diet free from purin bodies, and determine the natural production of uric acid under these conditions. The ingestion of these substances is then gradually increased until the point of tolerance is determined. It is often noticed that small amounts can be borne nicely without increasing the uric acid output, while larger quantities increase it materially. This point should be determined in each individual case.

The Value of Individual Clinical Symptoms of Typhus Abdominalis in the Diagnosis.—TREUPEL (*Muenchener Medicinische Wochenschrift*, No. 39, 1905).—In spite of the fact that diagnostic methods in typhoid fever have been greatly improved, it often occurs that the diagnosis cannot be definitely made until a certain time has elapsed, and only then after a careful consideration of all of the symptoms.

With a view to determining the relative value of the individual symptoms, the author sums up his observations in a series of cases of typhoid.

In about 75 per cent. of the cases the history was such as to lead one to think of typhoid; 47 per cent. showed throughout the course of the disease the typical fever curve. Bronchitis, more or less severe, occurred in about 48 per cent. in the beginning of the disease. The low pulse rate as compared with the temperature was evident throughout the disease in 86 per cent. of the cases. A tendency to euphoria, a general well-being, existed in 57 per cent. The so-called lingua typhosa, with heavy coating, occurred in about 17 per cent. of the cases, and angina, catarrhal, and follicular in 58 per cent. Abdominal symptoms, such as meteorism, tenderness, etc., manifested themselves in 62 per cent.; a demonstrable enlargement of the spleen could be made out in 87 per cent; roseola spots in 72 per cent. The diazo reaction appeared in the urine in 73 per cent.; the Gruber-Widal reaction in about 91 per cent., and bacilli could be demonstrated in the blood in about 93 per cent. of the cases.

Ischochymia and Its Treatment—EINHORN (*Archiv. fuer Verdauungs-krankheiten*, Vol. XI, Part 3).—By ischochymia is meant a retention of gastric contents, the same condition which exists in dilatation of the

stomach, enlargement of the organ with motor insufficiency, with or without obstruction of the pylorus. The treatment may be medical or surgical. The benign cases may first be subjected to internal treatment, lavage, fluid diet, rectal feeding, bismuth, etc. If these methods, judiciously applied, fail, then surgery may be resorted to. In the malignant cases, operation should be resorted to at once in order to avoid complication as much as possible.

The Diagnosis and Treatment of Ulcer in the Stomach.—WIRSING (*Archiv. fuer Verdauungskrankheiten*, Vol. XI., pt. 3), reports his observations in 320 cases of ulcer in the stomach. He considers at length the etiology and diagnosis of the condition with reference to age, sex, etc. His statistics show a marked difference in the number of permanent and temporary cures. This discrepancy is explained through the tendency of ulcers to recur. The very nature of the treatment for ulcer predisposes one to a recurrence. The resistance of the patient is naturally lowered through starvation. The author tested in forty-two cases the method of Lenhartz, which consists in giving the patient a rich albuminous diet throughout, beginning with two raw eggs and 200 c.c.m. of milk, gradually increased to eight eggs and a litre of milk per day, etc. The results of this method were far better than those of the Leube-Ziemssen method both with reference to temporary and permanent results.

Thoracic Ostealgia.—RIGA (*Berliner Klinische Wochenschrift*, No. 41, 1905,) describes three groups of ostealgias. The first is of the body of the sternum, and resembles somewhat angina pectoris. In these cases, however, the pain seems to have its origin where it is felt. The sternum in these cases is very sensitive to pressure.

In the second group the pain is in the xiphoid process, and seems to radiate in all directions. An arthritic diathesis seems to play a role in some of these cases, in others general neurotic tendencies are very prominent. In a third group the pain is localized in the false ribs. The author presents histories of a large number of cases.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

Artificial Hyperleucocytosis as a Means of Increasing the Resistance of the Body to Infection.—RENNER. (*Mitteilungen aus den Grenzgebieten*. Band, xv., heft, 1, 2.)—The author concludes after a most exhaustive experimental and clinical article dealing with this subject that the subcutaneous injection of nucleinic acid produces an increase of the white blood cells which lasts for a short time after a decrease of the same has been apparent. The same is slightly more pronounced after the injection has been made into the peritoneal cavity. Unpleasant symptoms

follow the use of as much as one gramme of the acid although these are not productive of permanent bad results. The best protection obtained seems to be against the colon bacillus, although it is possible that some others are affected as well. It must be kept in mind, however, that what we attain is a greatly increased resistance and by no means a specific immunity of any kind. The author wishes it distinctly understood that he is not trying to decide whether we have in this phenomenon to do with a proper phagocytosis or with the production of alexins.

Studies in the Surgical Anatomy of the Small Intestine and Its Mesentery.—MONKS. (*The Annals of Surgery*, October, 1905.)—After an extensive series of experiments the author has come to a number of conclusions which are interesting and at the same time of decided practical value. He found that the small intestine varied in length from 14 to 33 feet in adults, the average being 33 feet, the free border of the gut naturally being much longer than the mesenteric insertion. The mesentery varies greatly as to the length of its different portions. It increases gradually and reaches its maximum about five feet from the upper end of the intestine and diminishes again at the lower end. It varies from five to seven inches in length as a rule. It is not likely in view of the author's measurements that a loop of intestine from the upper portion ever occupies a position low down in the abdomen, though there can be exceptions to this rule. Each loop occupies as a rule a position in the belly just lower than the one whose attachment lies immediately above its own. In most instances some portion of the intestine can be drawn down as far as the pubis. The lower portion of the small intestine is thin, flabby and lacks the rich blood supply which characterizes the upper portion. It is consequently of less physiologic value than the upper part and is fortunately far more often of the two the seat of disease. According to the author, an easy way to find the head of the large bowel is to hook the finger around the lower end of the mesentery and thus can almost invariably guide it to the desired spot. He says this procedure has very rarely failed him. By inflating the bowel it is seen to take naturally a serpentine course, all the alternate loops being on opposite sides of the mesenteric insertion. It is interesting to note that fluid in the dependent portions of the intestines acts like a plumber's trap and prevents air being blown into or sucked from the entire tube at once. It is also on account of the tortuous condition of the bowel which makes it impossible to insert any instrument for any great distance into the tube, thus negating the value of many procedures which have been proposed having this end in view.

A New Treatment for Biliary Fistulæ.—PATEL (*Gazette des Hopitaux*, October 24, 1905).—Where pus is found in the gall bladder at operation it is frequently a difficult matter to get the resulting fistula to close. In fact, it often happens that such a lesion will remain open a year or two. Hence the author considers it of value to detail a procedure by which he has very quickly and conveniently accomplished the desired end. He noticed, to begin with, that the flow of bile in these cases was greatest at night, and that the patient was scarcely troubled at all by it in the day time. As a matter of course, it occurred to him that this had some-

thing to do with the patients taking food; consequently the rational thing suggested itself, that is, to keep the digestive apparatus working as nearly as possible all of the time, and thus excite a more or less continuous flow of bile into the intestine. How this worked in one case is shown when it is related that a young lady was operated upon July 29th, and on the 7th of August took two meals during the night as a beginning. The 9th of August she was fed every two or three hours, day and night. On the 11th of August the dressings were scarcely soiled, and on the 12th the fistula had closed entirely. This seems an unmistakable proof that the therapeutic measures employed had a great deal to do with the result attained. Of course this proposal has nothing to do with those cases in which there is an anatomical lesion in the common duct or in the cystic duct. There nothing can be accomplished in this manner.

A Plea for Local Anesthesia in the Radical Cure of Inguinal Hernia, Based on a Study of 300 Cases.—BODINE (*Medical Record*, October 21, 1905).—The author's reasons for this suggestion are, first of all, that it is much safer for the patient than a general anesthetic. Especially is this true in cases of strangulated hernia. The author finds, in fact, that the pulse and general condition improves in these cases, instead of doing the opposite as when they are operated upon under ether. Again, the protection to the tissues which naturally obtains when operating under such circumstances, leaves them in a better condition for repair than would be the case if a general anesthetic had been used. Vomiting is avoided, consequently no strain is put upon the stitches. Pain is not felt if the anesthesia is properly carried out.

The Treatment of Arterial Angioma Racemosum of the Scalp.—KROGIUS (*Zentralblatt fuer Chirurgie*, September 30, 1905).—All sorts of methods, such as mechanical compression, ligation of tributary blood vessels, etc., have proven themselves of no avail in this connection. Hence the author proposes an idea which he has found of the greatest service in one case at least. He inserted all around the periphery of such a tumor, catgut ligatures, half being very deep and the other half very superficial, these being tied together in such a way as to compress everything between them. As a result, he was gratified by seeing the disappearance of the greater portion of the pathological parts which he was treating. This method was absolutely successful in all but one portion of the growth, and that located just above the ear, where, for fear of gangrene, he had left a little periphery untreated. He now tried every means known for the correction of this remaining defect, but without success until he finally completed the circle around the growth by inserting these same ligatures through the pedicle which had been left, whereupon the rest of the malady promptly corrected itself. The illustrations which accompany the article very effectually illustrate the method of the author's procedure.

Practical Remarks on the Narcosis Phase of Chloroform Anesthesia, with Illustrative Cases.—MCALLUM (*The Scottish Medical and Surgical Journal*, October, 1905).—This so-called chloroform sleep is described by the

author as a condition in which the stage of surgical anesthesia has not been properly reached, but it so nicely simulates the latter that the surgeon is usually allowed to commence work, and is then startled at seeing his patient wake up, and further manipulation in this condition depends very largely upon the personal factor of the patient as well as the experience of the man who is giving the chloroform, and the latter is very liable to mistake the condition, since it is marked by a small, fixed pupil, the absence of corneal reflexes, and the other signs which are supposed to indicate a perfect state of surgical anesthesia. On the other hand, the pupils may be dilated, there may be shallow respiration and a little cyanosis, and still the patient be by no means under the influence of the drug.

A common cause of the condition is the patient being inspired to take long breaths or blow away the chloroform early in the administration of same. Usually no harm is done if an incision is made before the patient is properly under the anesthetic, but a source of danger is present if especial sensitive parts are involved, and thus cardiac inhibition is brought about. Where the narcosis is profound and all the signs are well marked, it is impossible to stimulate the respiration. Even a deep incision will not do it. In such cases, of course, the operation may be continued just as though the patient were in the proper surgical stage.

DIAGNOSIS.

IN CHARGE OF

A. E. TAUSSIG, M. D.

The Menstrual Fever of Tuberculous Women.—E. FRANCK (*Berl. klin. Wochenschr.*, 1905, No. 42).—In March of this year Sabourin and, somewhat later, Krauss pointed out that women affected with tuberculosis, but in whom there was no fever, showed a constant elevation of temperature during the menstrual period. The rise in temperature is occasionally considerable, so that the patients themselves are aware of it, but is usually less than a degree. Often its onset precedes the beginning of the menses. Franck, as the result of observations based upon a great number of cases, extending over several years, confirms this statement. He finds that such elevations of temperature can most certainly be recognized if taken per rectum. The only source of error consists in the presence of chronic pelvic inflammation. Here, too, there is a rise of temperature during the menses, especially per rectum. If, however, this complication can be excluded, a menstrual fever is extremely significant. It is too early to maintain that this phenomenon is absolutely pathognomonic of tuberculosis. Nevertheless, the observations already made indicate that in the presence of other signs it forms a valuable bit of confirmatory evidence, and that even if all other indications of tuberculosis are absent, it should excite the suspicions of the observer.

The Value of the Various Clinical Symptoms for the Diagnosis of Typhoid Fever.—G. TREUPEL (*Muench. med. Wochenschr.*, 1905, No. 39).—In the past two years the writer has studied sixty cases of typhoid fever with great care and in great detail. Many of them were atypical in one way or another—indeed, few of them showed the characteristic symptom-complex in its completeness. His results may be briefly tabulated as follows:

1. A typical typhoid tongue appeared in 16.7 per cent.
2. The temperature curve was characteristic in 46.7 per cent.
3. A well-marked bronchitis was found in 48.3 per cent.
4. A feeling of comfort out of all proportion to the fever in 56.7 per cent.
5. An angina was present in 58.3 per cent.
6. There was abdominal discomfort (meteorism, etc.) in 61.7 per cent.
7. Roseola in 71.7 per cent.
8. Positive diazo-reaction in the urine in 73.3 per cent.
9. The previous history suggested typhoid in 75.0 per cent.
10. A pulse slow, out of proportion to the temperature, in 86.7 per cent.
11. A distinct splenic tumor appeared in 86.7 per cent.
12. The Widal reaction was positive in 90.6 per cent.
13. Typhoid bacilli were found in the blood in 92.8 per cent.

These figures are of considerable interest. The two most constant signs were a positive Widal and the cultivation of typhoid bacilli from the blood, the latter not only being more constant than the former, but being positive earlier in the disease. Next in importance came the splenic tumor and the slow pulse, followed by the positive diazo-reaction, the occurrence of rose spots and the anamnesis. The other signs and symptoms were much less constant, the typhoid tongue and the temperature curve apparently being least significant of all. It is rather strange that he failed entirely to take into consideration the leucopenia and the relative leucocytosis. To be sure, the number of cases studied (sixty) was too small to justify any hard and fast conclusions. They are none the less suggestive.

The Urine in Abscess of the Liver.—E. AXISA (*Zentralbl. f. inn. Med.*, 1905, No. 36).—In all cases of profound interference with the hepatic function there is a diminished production of urea. The urine, therefore, contains a diminished amount of urea, while that of ammonia, out of which the urea is ordinarily elaborated, is increased. In ten cases of hepatic abscess the writer found the urine very poor in urea, whereas the amount of ammonia present was from two to five times greater than normal. When the liver had resumed its functions as the result of recovery following operation, the amount of urea in the urine again became normal. In the diagnosis of abscess of the liver we have thus, besides the history, the physical signs, the fever and leucocytosis, another valuable diagnostic aid in the determination of the amount of urea in the urine.

The Methylen Blue Reaction in Typhoid Urine.—RUSSO (*Riforma Medica*, 1905, No. 19).—The methylen blue test consists in the addition

of four drops of a 1 per cent. clear solution of Merck's methylen blue to 4 or 5 c. c. of urine. In typhoid urine the blue color of the stain is promptly converted into a deep green. The test is said to be positive during the entire course of the disease, becoming negative at the exact moment when the infection is overcome. It also occurs in measles, small-pox, in advanced tuberculosis, tuberculous pleurisy, empyema and peritonitis. Nevertheless the number of affections, in addition to typhoid fever, that produce a positive reaction is somewhat less than with the diazo reaction. Another advantage over the latter is the ease with which it is performed.

Staining the Cells of Exudates.—N. JAGIC (*Wiener klin. Wochenschr.*, 1905, No. 40).—Owing to the unsatisfactory nature of the usual methods of staining the cells of pleuritic fluid, ascitic fluid and other pathologic exudates, a number of improved methods have recently been advocated. Jagic's suggestion is as follows: The fluid is thoroughly centrifugated and decanted. The sediment is repeatedly shaken up with about 10 c. c. of a 20 per cent. aqueous solution of formol and centrifugated thoroughly each time. The formol solution is then carefully withdrawn and the sediment shaken up with 1 c. c. of equal parts distilled water and Giemsa's stain (supplied in this country by Leitz). In five minutes the cells, whose nuclei are stained with special sharpness, are examined in the staining fluid.

Errors in Diagnosis.—J. R. BRADFORD (*Brit. Med. Journal*, 1905, June 10; *Monthly Cycl. of Pract. Med.* 1905, No. 10).—In discussing errors of diagnosis, the writer considers first those arising from the mistakes in the interpretation of symptoms. Fatal cases of angina pectoris associated with extensive fatty degeneration of the heart are often overlooked and the pain attributed to myalgia. The occurrence of vomiting is often of great importance; cases of cerebral hemorrhage ushered in by vomiting are often looked upon as a mere dyspepsia. A symptom that is often overlooked is the occurrence of retention of urine in local or general peritonitis which is running a latent course. A far more important cause of error in diagnosis is the very frequent presence of serious organic disease without the occurrence of symptoms of sufficient intensity to attract notice. General suppurative peritonitis, dependent even on perforation, may be present without the cardinal symptoms—pain and vomiting. Cerebral tumor, abscess of the brain, and cerebral aneurism may all reach a high degree of development without the presence of any noticeable symptoms. Pleural effusion is especially apt to run a latent course—one whole side of the chest may be full without symptoms. Gastric ulcer, cirrhosis of the liver, tuberculosis peritonitis, and renal disease are also instances of serious organic disease liable to run a symptomless course. The most important source of error with regard to the interpretation of symptoms arises from the attribution of acute symptoms to the onset of acute diseases, whereas in a very large number of instances acute symptoms arise in the course of chronic disease. For instance, sudden acute intestinal obstruction occurring in those apparently healthy, is sometimes dependent upon obstruction produced by chronic tuberculous peritonitis. Sudden paraplegia, simulat-

ing an acute transverse myelitis, may occur in chronic and progressive diseases as malignant disease of the spine or aneurism. Mistakes in diagnosis arise not only from want of examination, but also from the want of repeated examination. The latter is necessary because in organic disease the signs are sometimes transitory, or at any rate, not persistent. The physical signs of disseminated sclerosis—the ankle clonus, the diplopia, and even the hemiplegia are often variable and transient in their occurrence.

The erroneous interpretation of physical signs is another very common source of error; this applies especially to the chest. Mimicry of organic by functional disease often leads to mistakes, as in functional and hysterical palsies on the one hand, and in disseminated sclerosis on the other. In another group of cases an inflammatory mischief in the chest simulates acute abdominal affections, such as peritonitis. Another potent cause of error in diagnosis arises from the fact that many common diseases are apt to exist in anomalous form. Some errors are dependent on treatment; the too ready administration of morphine often hides the signs of abdominal disease; meningitis may be erroneously diagnosed in phthisis where the trouble is due to atropine given to relieve cough. Alcohol may be pushed to such an extent as to produce coma, which may be regarded as dependent on the underlying disease.

THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

New Observations on the Rational Treatment of Chronic Constipation.—SCHMIDT (*Muench. Med. Wochenschr.*, 1905, p. 1971,) has observed that in chronic constipation a greater proportion of the food ingested undergoes digestion and absorption than in the normal individual, and consequently leaves a smaller, more compact residue. Furthermore, because so little residue remains, there is less material and a less favorable medium for the development of bacteria, in consequence of which fewer irritating decomposition products arise upon which the stimulus to the necessary peristalsis partly depends. The necessary conditions for a satisfactory evacuation consist in a sufficient volume of feces, a sufficient water content, and the presence of substances which act as a chemical stimulant to peristalsis.

The articles of diet usually employed in this condition sometimes fail in their effort because they are equally as well digested as is ordinary food. In casting about for a substance which would be absorbed with difficulty and would retain its water content as well, the author hit upon agar-agar. This he gives in daily quantities of 25 grm. of the dry shredded substance, to be taken one-third at a time. He has seen no gastrointestinal irritation in consequence of it. It produces an increase in the volume of the stool of two to three times the usual quantity. In some cases, however, he observed that while the stool was much increased in

volume and softened in consistency, an enema was required to evacuate it. He ascribed this to the absence of stimulating substances, and, therefore, added minute quantities of an aqueous extract of cascara, which served his purpose without producing the usual physiological effects of the drug. He experimented for the same purpose with paraffinum liquidum and white or yellow vaseline in daily quantities of 12 to 30 grm. with similarly favorable results. He found only a small proportion was absorbed. To this it was also necessary to add a small quantity of cascara. These substances, however, should not encourage the neglect of the usual physical measures applicable in chronic constipation.

Intravenous Digitalis-Therapy.—MENDEL (*Therap. der Gegenwart*, 1905, p. 398).—Although this article involves reference to a proprietary preparation, the reviewer considers it worthy of attention. The author emphasizes that none of the active principles that have been isolated from digitalis leaves produces the complete therapeutic effect as obtained from an infusion of the pure drug. The impossibility of securing an accurate dosage of any preparation of the crude drug, partly because of variations in the grade of the drug itself and partly because of variations in the extent of absorption from the gastro-intestinal tract and of elimination of the drug, and the partial action of any one of the isolated principles, led Mendel, after experimenting with a number of preparations designed for the purpose, to attempt intravenous injections of digitalone as prepared by Parke, Davis & Co. This meets the requirements of a preparation for intravenous injection. It is sterile, does not cause coagulation of the blood, is uniform in strength, and produces neither local nor general untoward effects. The injections should be made into the veins at the elbow, naturally with aseptic precautions. They are indicated in those cases in which irritability of the gastro-intestinal tract precludes the administration of digitalis by mouth, in cases in which there is poor absorption of the drug or a tendency to a cumulation effect in instances in which it is desirable to obtain a digitalis stimulation and at the same time spare the stomach any possible irritation, and when a prompt digitalis effect is imperative. Mendel finds that in the majority of cases the reaction to the injection is almost immediate and characteristic in every way of the well-known digitalis effect. It reaches its maximum in a few minutes, and disappears gradually in the course of twenty-four to thirty-six hours. A prolonged effect necessarily requires repeated injections, which, in cases of complete insufficiency, should be made every twelve hours, while a relative insufficiency requires injections with less frequency, say at intervals of twenty-four to forty-eight hours. The full dose for an adult should be 2 cc. (equivalent to 0.2 g. of digitalis leaves), which may be materially reduced for children and for less robust individuals. It enables an accurate adjustment of the dose and a prompt appreciation of its effect.

Mendel has used this method successfully in eleven cases of valvular heart disease, eighteen cases of myocarditis and arterio-sclerosis, thirteen cases of fatty heart, twenty-three cases of functional disturbances of the heart and six cases of heart insufficiency in acute infectious and in chronic diseases.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

A Method for the Forensic Demonstration of the Origin of Blood.—M. NEISSER and H. SACHS (*Berl. Kl. Woch.*, 1905, No. 44).—The importance of a reliable method to identify human blood from the blood of other organisms has been shown by the unanimity with which forensic medicine all over the world availed itself of the specific-precipitin-reaction discovered by Wassermann and others, and introduced for practical purposes by Uhlenhuth. This method is known as the biologic method, and if applied with the proper precautions, gives absolutely reliable results, as long as the blood of monkeys can be excluded. It suffers, however, under several difficulties that stand in its way for ready and routine application. The immune serum used must be of high potency, and all of the fluids must be clear, a point that, with serum and with solutions from blood-spots, etc., sometimes is very tedious to comply with. Neisser and Sachs have not substituted, but paralleled, this procedure by another that is based on investigations by Moreschi (under Pfeiffer). He discovered a peculiar anticomplementary serum action that is conditioned by two substances, one present in the serum of the immunized animal, and the other in that animal whose serum was used for immunization. The very complex course of the reactions taking place cannot be discussed in a few words; it may be sufficient, that by using this reaction, it is possible to produce a distinct hemolysis by even the minutest quantity of serum. With an amount as small as 1-100,000 of a cc. a distinct reaction can be obtained. As for hemolytic experiments, an absolute clearness of the fluids is not necessary, for this reason alone, the method recommends itself. It has the further advantage, that it can be made with the same material that has served for the precipitin-test—an important point, where, with a small material at one's disposal, the first reaction has remained inconclusive. Like the precipitin-test, the new method will only be reliable in the hands of competent men, well versed in this special field of experimentation. It need not be mentioned that the reaction, like the precipitin-reaction, is only a proteid reaction, not a specific-blood-reaction, so that in any case where it is to be applied, the nature of the material to be investigated must be previously determined by the usual methods to be blood. The biologic tests will only say that the material is human, or that it belongs to this or that animal; it does not say it is blood.

Contribution to Our Knowledge of Spirochaete Pallida.—FRITZ SCHAUDINN (*Deutsch. Med. Woch.*, 1905, No. 42).—The numerous investigations following Schaudinn's first publication on the syphilis-spirochaete have established, that we may with certainty consider this organism a regular inhabitant of syphilitic lesions, that does not occur in any other condition; it is, we may at least say, pathognomonic for syphilis. Schaudinn's

latest article sums up in a clear way what, so far, has been achieved, and at the same time reports preliminarily about new discoveries he has made. He has finally succeeded in demonstrating a flagellum at each end of the organism; he has followed up the longitudinal fission and discovered chromatin granules within the body, suggesting a nuclear arrangement like in other sporozoa. Careful simultaneous study of other spirochaetæ led to the conclusion that the pallida does not belong to this genus; that it represents a form of another type, known as spironema, an idea that was first suggested by Vuillemin. The presence of flagella (absent in spirochaete), the absence of an undulating membrane (easily demonstrated in the latter), and the round outline of the cross section of the body (flat in spirochaete) separates it definitely. Practically, these observations are very important, as they offer means to differentiate between similar forms that, so far, could only be distinguished by the shape and staining capacity. Besides calling the organism specific for syphilis, Schaudinn does not express himself on its possible etiologic meaning. He, however, believes that it will be found in the future in tertiary lesions also, perhaps in a stage different from that found in the primary and secondary effects.

About Immunity Reactions Specific for Genera.—S. ZUPNIK (*Zeitschr. f. Hyg. u. Infect. Krankh.*, 1905, Vol. 49, H. 3).—Zupnik comes on the basis of experiments with agglutinins that cannot be detailed here, to the general conclusion that the immunity reactions, so far known, are not specific, but generic. The reactions, together with the biologic qualities, allow of defining genera of bacteria that, in many cases pathologically, too, are very similar in their single species. So, for instance, all the forms belonging to the typhoid group are characterized by causing a primary lesion of the lymphatic apparatus of the intestine, and by their quality to pass the intact epithelial barrier. They show, besides, a specific affinity for the mesenterial lymphatic glands, the spleen and the bone marrow. In a primary infection of the blood, they cause a peculiar form of sepsis, with especial participation of the hemato-poietic tissues. It is possible to demonstrate the anatomical and clinical uniformity of typhoid, paratyphoid, meat poisoning, mice-typhoid, hog cholera. The reactions of such genera have no relation to what is called group reactions. Zupnik infers from his results that we are justified to assume as causative agents bacteria belonging to the genus of those that produce diseases anatomically and clinically similar with the ones for which the etiologic agent is not known. He maintains that an identical clinical process may be produced by different species of the same genus, and thinks it very likely that asiatic cholera is not an uniform disease. As the receptor apparatus of species of the same genus is very uniform, it is to be recommended to use for specific therapy forms of this genus, that are not pathogenic.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

Hemophilia in Women.—R. DE BOVIS (*Semaine Medicale*, No. 36, 1905).—This article is a most exhaustive consideration of the influence of hemophilia upon the sexual life of women. The writer's interesting deductions are made from personal observations and a careful study of the literature. In 150 hemophiliac patients excessive post-partum hemorrhage occurred sixty-nine times. In two mothers it seemed that nursing increased the flow and the babies had finally to be put on artificial food. There seems to exist a tendency of abortion. In some cases the hemophilia exists in a rudimentary form, and becomes manifest during childbirth. The menstrual history may suggest the probability of such a complication of labor. During the year 1903 there occurred 476 deliveries in the service of the writer. In 153 cases the record showed a menstruation of more than five days' duration; in 323 of less than five days. It seems noteworthy that excessive post-partum hemorrhage was observed in 13 per cent. of the first, and only in 8 per cent. of the latter group. This hemophiliac tendency may manifest itself suddenly, not only during labor but also at the beginning of puberty and the menopause. The author quotes a number of very instructive cases reported by de Lee, Ahlfeld, Switalski and others in which, without warning, fatal hemorrhages occurred during labor, or during a curettment performed soon after labor.

In the writer's opinion, marriage should be strictly forbidden in the families of bleeders, both to the men and the women.

In the last part of his paper the author takes up the question of therapy of hemophilia. He saw very little effect of gelatine injections. Since there always is a pronounced nervous element in this condition one must not be surprised by records of wonderful cures by means like "drinking all the champagne the patient wants." The main reliance rests in local applications. He uses hot irrigations, washing with adrenalin solution and packing, possibly with gelatinized dressings. Steam cauterization may be tried, and if all these efforts fail the hemorrhage must be stilled by clamping, or ligation of the blood vessels, and as a last resort by extirpation of the bleeding organ, if possible. In considering operations upon hemophiliacs, the writer emphasizes the interesting observation, that they always tolerate operations on the large arterial trunks better than superficial wounds.

Successful Cesarian Section on the Dead.—BOURDZYNISKY (Abstract from the Russian Original in *Annal. de Gyn. et d'Obst.*, August, 1905).—This operation was performed fifteen minutes after the ascertained death of the patient. The well developed full term child was deeply asphyxiated and began to breathe about fifteen minutes after it was extracted. The writer appends the records of fifteen other instances of similar successful operations published within the last ten years.

[This case is of special interest on account of the fact that the patient died from asphyxiation due to eclamptic convulsions, which persisted for about thirty hours. It is very exceptional that the fetus can be saved in cases in which the mother dies a slow death. Most of the successful operations have been performed on women who had died suddenly.—EDITOR.]

Twin Pregnancy with Hydatiform Degeneration of One Ovum.—WAGNER (*Zentralbl. f. Gyn.*, No. 42, 1905).—Microscopical examination of the placenta proved that it was a bi-ovular pregnancy. The hydatiform mole contained a fetus 14 cm. long. According to the statement of the author this is the first case of hydatiform degeneration of but one ovum in a true twin pregnancy. In similar cases recorded in the literature it was impossible to show that the hydatiform mole was not due to degeneration of either a portion of the chorion laeve or of a detached portion of placental tissue in a placenta succenturiata.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

Uremic Intoxication in the Course of Scarlatinal Nephritis.—BOUCHET (*These de Paris*, rev. *Mens. de Mal. de l'Enf.*, September, 1905,) believes that, in scarlet, an absolute milk diet should be given for four or five weeks after the appearance of the eruption. Rest in bed and disinfection of the naso-pharynx are additional measures to diminish the frequency of nephritis and uremia.

Most of the remedial agents used in the treatment of uremia, with the exception of venesection, the author considers useless. Diuretics and diaphoretics are ordinarily without effect; they may even prove harmful. Purgatives and emetics, though less harmful, are usually ineffective. Chloral may, at times, diminish the severity of the uremic convulsion.

Venesection (and copious venesection) is the only procedure of value in the presence of uremic intoxication. It should be resorted to as soon as the cerebral or dyspnoëic symptoms become alarming, and it often produces the most un hoped-for results. Even pronounced anemia is not an absolute contraindication.

Subcutaneous injections of saline solution may often be combined with venesection to advantage. Severe anasarca may at times offer a contraindication to this latter procedure.

Treatment of Scarlatinal Uremia in Children by Venesection.—SINGER (*Jahrbuch f. Kinderheilk.*, September, 1905,) says that this method of treatment is still under discussion. His own experience leads him to advocate it warmly. From 1896-1900 he had nine cases of scarlatinal uremia in hospital. These were treated without venesection. Of these, four recovered (44 per cent), and five died (56 per cent.). From 1900-1904 there were seventeen cases treated *with* venesection. Of these, fifteen recovered (88 per cent.), and two died (12 per cent.).

He believes that this method of treatment is thoroughly rational, and the most valuable method at command at the present time. Under proper precautions, the operation is safe and simple. Venesection is particularly indicated in cases of uremia with pronounced symptoms of cerebral irritation. In cases with coma and marked depression, the operation certainly does no harm, but the chances of recovery are slight. The procedure may be employed not only in strong children, but also in weakly, anemic cases, whether the pulse be retarded or frequent, so long as the pulse tension is high. In cases with thready pulse, the operation is usually valueless.

The venesection should be performed as early as possible—as soon as uremic symptoms manifest themselves. The amount of blood to be withdrawn must vary with the age and strength of the patient and with the severity of the symptoms. (Baginsky has shown that ordinarily one-fifteenth to one-twentieth of the entire amount of blood may with safety be withdrawn.)

If conditions necessitate it, the venesection may be repeated after twenty-four to thirty-six hours.

Drug Intoxications in Childhood.—BOSC (*These de Paris, Arch. de Med. des Enf.*, October, 1905), has collected ninety-seven cases of drug intoxication in childhood. His plea is for moderate therapeutics, and for the substitution, wherever possible, of physiological-hygienic therapeutics, instead of drugs in the treatment of diseases of children. Drug intoxications are doubtless very frequent in childhood—a frequency enhanced by the tendency toward antiseptic medication which characterized the latter part of the nineteenth century. For this antiseptic medicine, we are today substituting aseptic medicine wherever it is possible. Specific medication is being used in a constantly increasing degree. And where such treatment cannot be used, we are relying more and more on purely physiological measures, *e. g.*, hydrotherapy, because these measures have shown themselves to be of special value in pediatric practice.

Despite the remarkable tolerance of childhood, due to the quality of the renal filter and the rapidity of elimination at that time of life, it is undeniable that drug intoxications still occur with lamentable frequency in childhood. In studying the causes of these accidents, the author lays special stress on the fallacy of hasty therapeutics without sufficiently careful diagnosis, and inveighs against unnecessary multiplicity of drugs, and on the giving of strong doses, without consideration of possible personal idiosyncrasy.

Detailed account of accidents from the use or misuse of the following drugs is given: Acetanilide, arsenic, belladonna, bismuth, bromoform, cantharides, cocaine, chloroform, digitalis, glycerin, iodid, iodoform, mercury, betanaphthol, camphorated naphthol, opium, balsam of Peru, carbolic acid, phosphorus, picric acid, santonin, chlorate of potash, permanganate of potash, lead, salol, resorcin and chloride of zinc.

Visceral Sarcoma in Children.—ALFARO and SANTAS (*Arch. de Med. des Enf.*, October, 1905), report ten cases of visceral sarcoma (excluding lymphosarcoma and osteosarcoma) in children under eleven years of age. Four cases occurred in children between three and five years of age, and four in children between five and ten. Sarcoma of the mesentery

was found four times, of the kidney twice, of the cerebellum twice, of the intestines once and of the left lung once.

A characteristic symptomatology is of course not found, but the typical cachexia was present in all cases. Marked enlargement of the superficial lymph glands was missing, as a rule. Histologically, all the cases, except one of the cerebellar tumors, were found to be of the small round-celled type.

In the cases of tumor of the kidney, pain was not a marked symptom, and hematuria was by no means constant.

It is recognized that this form of tumor is the one most frequently found in childhood, and if in childhood a rapidly growing tumor can be found it is almost certain to be a sarcoma. It is noteworthy that in only one of the ten cases reported by the authors, was there any fever. In this case, sarcoma of the lung, the autopsy failed to show any definite cause for the fever.

The progress in all the cases was rapid. Exploratory laparotomy, made in three of the cases showed the futility of attempted removal.

• ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

Fracture of the Spine—A Summary of All the Cases (244) That Were Treated at the Boston City Hospital from 1864 to 1895.—HERBERT L. BURRELL, Boston, Mass. (*Annals of Surgery*, October, 1905).—The question which immediately arises in the mind of the surgeon when he first sees a patient with fracture of the spine is whether the cord is irretrievably damaged. The utter hopelessness of the case where the cord is completely destroyed is universally accepted. The question is, is it irretrievably damaged or not. On the answer to this question depends whether or not operation should be done. The author takes up the cases in series and gives a summary of the total numerically (244).

The Frequency of Symptoms.—Crepitus in 37.8 per cent., deformity in 60.1 per cent., unconsciousness in 17.6 per cent., complete paralysis in 71.7 per cent., partial paralysis in 11.3 per cent., no paralysis in 13.1 per cent., pain in 74.8 per cent., priapism in 66 per cent., delirium in 14 per cent., cystitis in 28 per cent., bed-sores in 26.6 per cent.

Regions.—Cervical 33.9 per cent., upper dorsal 16.7 per cent., lower dorsal 32.9 per cent., lumbar 16.3 per cent.

Mortality.—Deaths 64.5 per cent., recovery 35.5 per cent.

Time.—Death within five days in 65.7 per cent., within ten days in 8.6 per cent., within one month 12.1 per cent., after a month in 13.6 per cent.

Results.—Total recovery 3.55 per cent., partial recovery 62.6 per cent., useless 37.8 per cent.

From the consideration of these cases the following conclusions are drawn:

First.—That fractures of the spine may well be divided into classes:

first, fractures of the spine with injury to the cord; and, second, fractures of the spine without injury to the cord.

Second.—That it is not best to decide what the treatment of an individual case of fracture of the spine should be from the statistics, because the lesion varies so widely.

Third.—That in many cases of fracture of the spine it is impossible to primarily state whether the cord is crushed or pressed upon by bone, blood, or exudate, except by an open operation.

Fourth.—That only by the persistence of total loss of reflexes, complete insensibility to touch and pain, and motor paralysis below the level of the lesion, can total transverse destruction of the cord be diagnosed.

Fifth.—That if pressure on the cord is allowed to remain for many hours, irreparable damage to the cord may take place.

Sixth.—That unless it is perfectly clear that the cord is irremediably damaged, an open operation to establish the condition of the cord and to relieve pressure is imperative as soon as surgical shock has been recovered from.

Seventh.—That in certain cases of fracture of the spine, when the cord is not injured but is liable to injury from displacement of the fragments of a vertebra, rectification of the deformity and fixation of the spine may be used.

Eighth.—That if the cord is crushed, no matter what treatment is adopted, there will, of necessity, be a high rate of mortality.

Orthopedic Surgery.—A. H. TUBBY, M. S., F. R. C. S., London (*The Practitioner*, November 1905).—In giving a summary of the work accomplished in orthopedic surgery, Mr. Tubby compliments the *American Journal of Orthopedic Surgery*, and says it has given a great impulse to this branch of surgery. He says "the thoughtful character of the papers of our American confreres invite much reflection while the focusing of the literature of orthopedic surgery all over the world in the pages of this journal devoted to abstracts, is of great importance to busy workers. The journal is characterized by remarkable thoroughness and accuracy in every particular. On the nomenclature of joint diseases he quotes Goldethwaite and agrees with him in his five divisions of chronic non-tuberculous joint affections, and says: "It is a matter of hope that this rational classification founded upon a sure pathological basis may be adopted widely and so become a means of throwing light upon correct diagnosis of all cases of deforming joint diseases." In deducing conclusions from the statistics of congenital dislocation of the hip, he says that there has been a steady gain in the success of manipulative methods, and that step by step this method has won in overcoming difficulties, and that it seems to him a much larger measure of success may be looked for in future years. As to priority of the manipulative methods of reduction, he points out the difference between the Lorenz method and that of Paci, of Pisa. He believes that in the near future the irreducible cases will gradually diminish to the vanishing point. In speaking of nerve grafting, he says that the number of cases in which this procedure has been carried out for various forms of paralysis is

steadily increasing, but that the matter is still *sub judice* and we must await final results before expressing definite opinions as to its exact value.

Tubercular Conditions of the Spine Requiring Surgical and Medical Relief.—DE FOREST WILLARD, Philadelphia (*Annals of Surgery*, October, 1905).—The most permanent surgical measures employed for the relief of spinal affections of a tuberculous character are (1) laminectomy for paraplegia, (2) forcible immediate straightening for kyphosis, (3) gradual forcible straightening for kyphosis, (4) erosion of carious bone, (5) wiring of the spinous processes, (6) evacuation of the pus accumulations. The author concludes as follows:

1. Complete methodical and long-continued fixation of the spine in the position of hyperextension, with healthy surroundings in the sunlight, are the prime factors in securing new ossific deposit necessary to replace the carious bone.

2. Laminectomy for paraplegia is advisable only after long-continued and patient treatment, along the above named lines from one to two years, since the prognosis, especially in children, under these conditions is favorable, and good powers of locomotion may be confidently expected. The operation is justifiable in selected cases where loss of motion and sensation are progressively worse and the symptoms threaten life. If the tubercular masses within the spine can be removed, and if extradural pachymeningitic deposits or pus can be taken away, improvement may be expected, and in many cases relief occurs. The operation has a mortality of about 25 per cent. from immediate shock, 36 per cent. within a month; while one-half of the cases die within the year, their lives being probably shortened by the operative procedure. Cases of non-improvement and death equal nearly 65 per cent.

3. Forcible immediate straightening of the kyphosis is an unsurgical and dangerous proceeding; it is liable to reawaken the tubercular disease and to weaken the column.

4. Forcible gradual straightening by supporting the kyphotic area upon a pedestal, is a valuable agent in relieving the deformity. The weight of the shoulders and pelvis can thus be utilized as straightening forces and the weight of the column thrown upon the posterior arches. In this position it is permanently fixed by plaster of Paris.

5. Complete erosion of the carious bodies of the vertebrae is an uncertain operation; in the dorsal region, requiring section of the ribs, with danger of wounding the pleura.

6. Wiring of the spinous process has never been sufficiently tried to demonstrate its helpfulness.

7. Spinal abscesses which contain only liquification of caseation should be aspirated. When true pus has formed, aseptic thorough drainage is advisable.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

A Study of Mental Disease Associated with Cerebral Arterio-Sclerosis.—BARRET (*American Journal of Insanity*, No. 1, 1905).—This is an important article and merits attention. There are at the present time three forms of mental disease which seem to be associated with characteristic changes in the central nervous system. These are general paralysis, arterio-sclerotic dementia, and less certainly senile dementia. The better understanding of the pathological anatomy of general paralysis, and the importance which plasma cell infiltration of the vessel wall is known to play, has cleared the way for the separation of the arterio-sclerotic brain diseases. Anatomically, arterio-sclerotic brain disease must be considered as two processes—that present in the vessels, and the reaction in the nervous tissue. Alzheimer in 1902 described four groups of cases in which the mental process is associated with arterio-sclerotic brain disease:

(1) Arterio-sclerotic brain atrophy which, clinically, may develop in two ways—minor nervous symptoms; progressive type. Anatomically, there is severe sclerosis of the arteries, with very slight gross changes in the brain. Microscopically, there is an absence of focal disintegration, and the ganglion cells show little more than slight pigment changes.

(2) Subcortical encephalitis. Atrophy of the deep-lying white substance, due to arterio-sclerosis of the long medullary arteries. Clinically, difficulty in the association processes is the first and the most striking symptom. Speech is early affected.

(3) Perivascular sclerosis; atrophy of the nervous elements, and a proliferation of glia in the field of distribution of vessels, which, by reason of arterio-sclerotic disease, furnish less nutrition.

(4) Senile cortical devastation; arterio-sclerotic degeneration of the smaller vessels of the cortex, with disintegration of the nervous elements in peculiar wedge-shaped foci or in streaks.

Four cases belonging to the first class, and one other, in which the process was more pronounced, are described by the author as illustrations.

A Stationary Form of Dementia Paralytica.—SOUKHANOFF (*Revue Neurologique*, October 15, 1905).—As a rule, dementia paralytica presents a psychosis in which the symptoms, both mental and physical, are progressive. In individual instances the duration of life in this disease can be indefinitely prolonged. The duration found in a statistics of 200 cases by Dedoff shows fairly limited periods of duration, much less than ten years. Wickel called attention recently to a stationary form of dementia paralytica. In this paper such a case is described. The first observation was made on the case in 1888, and the recent observation was made in 1904. For twenty-seven years this patient has pre-

sented physical and mental symptoms which belong, without doubt, to dementia paralytica. The author attempts to explain the stationary character of this form of dementia paralytica by the theory that there is in some cases a formation of a kind of antitoxin to the syphilitic toxin, the origin of which is perhaps to be found in the endothelial reaction in the blood vessels to the active syphilitic poison.

Sudden Death in Tabetics.—GOLDFLAM (*Neurologisches Centralblatt*, October 21, 1905).—This is an interesting account of the causes of death in tabetics from symptoms other than the typical ones, which, as is well known, are seldom the cause of death *sui generis*. The question of the tabetic's tendency to develop tuberculosis is denied, although this has been pretty generally believed. There are some cases reported in the literature in which tabetics have died of laryngeal crises, gastric crises, etc. One of the most common causes of death is the occurrence of apoplectic seizures, with the subsequent development of hemiplegia. Cases of angina pectoris and aneurism are somewhat common, as well as all varieties of aortic disease. The interesting point in this discussion is, that all of these conditions mentioned are regarded as being in a large proportion of cases of specific origin. This brings the etiology of tabes itself, and the complications which subsequently arise, upon a common etiological ground. In the prognosis *quoad vitam* in tabes this point should not be lost sight of, namely, the possibility of sudden death from one of these conditions.

The Early Ocular Signs of Dementia Paralytica.—HOLDEN (*Journal. Nerv. Ment. Diseases*, November, 1905).—Ocular examination was carried out in seventy cases of this disease by a skillful ophthalmologist and by means of accurate measurements. The results are worthy of careful attention, as the usual data obtained in such cases are not reliable, as they are obtained by antiquated and clumsy methods. Some of the conclusions are as follows: The shape of the pupils was perceptibly irregular in 70 per cent. of the cases, an abnormally high percentage, considering the ages of the patients. In 45 per cent. there was inequality of the pupils. The sensory pupillary reflex was absent in 87 per cent. of the cases. The direct light reaction was perceptibly sluggish in one, or usually in both eyes, in 21 per cent. of the cases. The direct light reaction was entirely wanting in one, or usually both eyes, in 28 per cent. The convergence reaction was sluggish in 9 per cent. In 55 per cent. of the cases the pupil was smaller than would be normal for patients of similar age and the same degree of refraction. A table is appended giving in some detail the eye findings in all the cases.

The Antithyroidin Treatment of Basedow's Disease.—EULENBERG (*Berl. Klin. Woch.*, Fest-Nummer., Oct. 30, 1905).—An account of seven cases treated with the antithyroidin serum of Mobius. The serum was given internally in gradually increasing doses, beginning with ten drops three times a day. The dose was increased to thirty drops, and then the amount was slowly decreased. The results of the treatment were in the main satisfactory. The author believes that in the serum treatment there

is at least a very helpful addition to the usual means of treating this disease. The author especially insists that the usual dietetic physical methods should not be given up, but should be used with more than usual care with the serum treatment.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

Experience with the Methods of Determining Physiological Kidney-Function for Operative Procedure.—KROTOSZYNER and WILLARD (*Amer. Jour. Urol.*, October, 1905).—The authors illustrate their remarks with a few cases to prove that the three tests generally employed to determine kidney function (cryoscopy, phloridzin, and urea estimation), have been valuable aids diagnostically and prognostically, in their hands. Whenever they find in separately catheterized urines great differences in cryoscopical urine points, in sugar excretion, and in the amount of urea, they feel justified in concluding that little or no work is done by the diseased kidney, and that the other side is responsible for existing urinary function. They lay particular stress upon the fact that all three tests must coincide, and must show good, or, at least, fair points on the remaining side before nephrectomy is permissible.

Good operative results can be obtained even in cases where both kidneys are anatomically diseased, as long as sufficient functioning tissue appears to be left in the remaining kidney, which, after removal of the hopelessly diseased organ, may gradually improve.

Observations Upon the Cause and Treatment of Perineal Abscess and of Periurethral Suppurations Above the Triangular Ligament.—ALEXANDER (*Med. Rec.*, October 28, 1905).—Perineal abscess, when it is treated simply by incision and drainage without opening the urethra, is followed very often by a recurrence of the abscess at the original seat of the infection. In a large number of cases of abscess of the perineum, in which the pus seems to be altogether below the triangular ligament, and to be limited to the perineum, there are also foci of suppuration situated above the triangular ligament. These latter are found in the prostate, and alongside of the membranous urethra posteriorly. They seem to originate in the glands of the prostate, the glands of Littre, or the glands of Cowper. These collections of pus do not always communicate with the perineal abscess, or at least there is no apparent communication. In some of these cases the abscess opens spontaneously into the urethra and the pus drains imperfectly into the canal, and unless the urethra is opened, the presence of these abscesses are not suspected or discovered at the time of operation.

The source of infection in a perineal abscess is, according to the author's opinion, always from the urethra. The infection may occur in three ways: (1) Through the glands connected with the bulbous or

membranous portion, *i. e.*, the glands of the bulb, the glands of Cowper, Littre glands, or the prostate, and from these extends into the perineal tissues; (2), it may occur through small fissures in the mucous membrane of the urethra; (3), it may be the result of a more or less extensive mechanical rupture of the urethra from external or internal violence. Infiltration of urine occurs and plays a prominent part in the infection of some cases, but often it is absent. It is not an essential causative factor in all cases. Stricture of the urethra may or may not be present.

The treatment of these cases generally is defective, because the necessity of opening the membranous urethra and of draining the pus foci, which exist above the triangular ligament, is not understood or is disregarded. It is necessary, therefore, to open and drain the perineal abscess, and also to open the membranous urethra and to drain the foci of suppuration above the triangular ligament. After making the usual median perineal incision and opening the membranous urethra to the prostate, a careful and systematic exploration is then made for any foci of suppuration; and it is sometimes useful to make counter pressure with the finger of the other hand upon the anterior wall of the rectum during the examination, when all foci may be found and freely opened.

Lavage of the Renal Pelvis in the Treatment of Lithæmia, Pyelitis, and Certain Forms of Nephritis, with Notes of Illustrative Cases.—JOHNSON (*Amer. Jour. Urol.*, October, 1905).—Lavage of the kidney is not alone justifiable, but is a procedure whose importance demands recognition from the entire medical profession. Patience, gentleness and experience are necessary attributes in the successful application of this procedure. Lithæmia is more quickly eradicated when, in addition to the usual treatment, lavage of the kidney is employed. Pyelitis is a condition that should be recognized at any stage as a danger signal and promptly treated. If possible, the cause should be ascertained and removed. Very mild cases require only rest, and the administration of salol or urotropine; for all others, catheterization and irrigation, with boracic acid or silver salt solutions once or twice weekly, are indicated. Pyelonephritis may be treated in the same manner with similar agents. Ureteritis will heal under lavage with at first soothing, and later mildly stimulating fluids. Chronic parenchymatous nephritis can be alleviated, and in certain phases cured by proper irrigation, combined with appropriate diet and internal medicants; other forms of nephritis, also, are, in a degree, amenable to lavage.

Treatment of Chronic Prostatic Enlargement.—LEWIS (*Boston Med. and Surg. Jour.*, November 9, 1905).—The paper is summed up in the following conclusions:

1. The use of sounds is generally to be condemned.
2. The sphere of usefulness of the catheter is growing smaller and smaller as the advantages of an early operation make themselves manifest.
3. The Bottini operation may be applicable in selected cases, but should seldom, if ever, be adopted.
4. Orchidectomy, vasectomy, ligation of the internal iliacs, injection

of carbolic acid, application of electricity and allied methods are to be condemned.

5. Prostatectomy is the procedure of choice, best performed when the symptoms first make themselves manifest and the patient's condition is presumably at its best.

6. The preferable route is through the perineum, the preferable method that of Young or one of its modifications, but much depends upon the skill of the operator as regards the method employed.

7. In patients with foul bladders and diseased kidneys who, we have reason to expect, would not stand an extensive operation, thorough drainage should be first instituted either by a suprapubic or perineal incision under local anesthesia, to be followed later by enucleation, if deemed advisable.

8. The use of local anesthesia, especially spinal cocainization, is of great value, and should be more extensively employed.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

The Treatment of Mastoid Inflammation.—THOMPSON (*Lancet-Clinic*, October 28, 1905) believes that if local therapy were added to the constitutional treatment in all cases of acute rhinitis, influenza, measles, scarlet fever and typhoid fever the number of cases of mastoid inflammation would be very notably lessened. After the inflammation has been set up in the middle ear the measures that have proven beneficial in preventing extension to the mastoid cells are a free paracentesis of the drum and the establishment of thorough drainage. Preventive measures failing, the curative measures of most value in the early stages are local abstraction of blood and the application of cold. The German profession employ either the natural or artificial leech very freely in the early stages of mastoid inflammation. The ice bag or Leiter coil may be used.

Where cold is not tolerated, a hot water bottle or Japanese pocket stove may be substituted. Ice applications may not be continued more than two days. The dry heat may be continued as long as improvement follows its use. In the first forty-eight hours opiates may be used. If the inflammation is so severe as to result in the destruction of the bone, opiates will not relieve the pain and they should be promptly discontinued. The only thing to do, under the circumstances, is to open the mastoid cells and to drain the abscess through the opening. Radical operators say we are to wait only twenty-four to forty-eight hours for acute mastoiditis to subside. Careful men of large experience rarely operate before the tenth day of the active disease in the middle ear. The earliest symptoms of involvement of the meninges or of the lateral sinus should be followed by immediate operation. In cases of pus under the periosteum or in the connective tissue of the neck when first seen, no treatment but operation should be considered for a moment.

Relief for Hay Fever by Radical Intranasal Operation.—HOWE (*Brooklyn Medical Journal*, October, 1905) has found intranasal deformity in one or more of its many forms, in a very large percentage of cases of hay fever examined by him. The malformations or malpositions consisted of deflected and thickened septa, septal spurs, hypertrophied and cystic turbinals, polypi and polypoid degeneration, and bony and membranous synechia. One or more of these conditions have complicated almost every case. The nasal defects were most frequently found in the upper and anterior portion of the nasal passages. The hypertrophies were real or tissue rather than vascular, and were frequently from a quarter to three-eighths of an inch. In some the thickening was largely due to an increase in the bony and cartilaginous tissue. The increase was in the middle of the perpendicular plate of the ethmoid and the upper portion of the triangular cartilage. The bulging or local thickening of the septum produced pressure on the lateral walls in narrow nasal passages.

In other cases, a deflection of the septum pressed its thickened portion against the middle turbinal and lateral wall on one side. These pressure areas, due to thickened and deflected septa seemed to be the chief nasal defects in the cases Howe operated on and he believes it is the mechanical interference with nasal circulation that makes possible the severe symptoms of hay fever. The acute coryzas in those not subject to hay fever neurosis, have the same symptoms, only not so severe. If, therefore, the nasal defects causing pressure areas in these cases are corrected, the attacks of coryza either cease or are diminished in severity.

A Study of Certain Complications and Sequels in Operative Cases of Laryngeal Diphtheria.—ROYER (*Am. Med.*, October 28, 1905), mentions first reflex apnea as a cause of grave, respiratory and cardiac inhibition. The experiments of Harland, Good and Coile show that irritation of the pharynx, dilation of same and even forcible traction on the tongue will cause in man serious cardiac or respiratory inhibition, in some instances death. Royer has had two deaths during intubation or tracheotomy and feels that in these patients death was hastened by operative procedure. When the operation is done deliberately and this condition is feared, physiological doses of atropin will certainly obviate the danger.

Concerning auto-extubation when an intubation tube is inserted the work of the cricoarytenoidei postici is done by the tube. If the tube is left in place three days or a week, atony of these muscles from disuse occurs. This atony, Royer thinks, does not occur in the muscles of the larynx. The abductor muscles keep the cords so tightly closed that the tube must be reinserted. The cricoarytenoid lateralis may become exhausted from holding the cords constantly taught against the tube, which is, perhaps, too large for the larynx to wear comfortably. In a moment of quiet the muscles relax for rest, the child coughs, the tube pops out.

Royer's conclusions are: Atony of the abductors causes a tube to be returned in many instances. Pressure paralysis and exhaustion of abductors frequently cause auto-extubation. Retained tubes are also caused by pathologic changes in the soft structures of the larynx and trachea. Such changes are often hypertrophic in character, following

traumatism from the tube or loss of tissue from disease. There may be new cartilage formation in the perichondrium, narrowing the lumen of the larynx, thus making a distinct pathologic change. The course of treatment: (1) Persist with intubation; (2) insert large tubes; (3) tracheotomy if large tubes are not retained; (4) intubate frequently while wearing tracheotomy tube in order to prevent stricture stenosis; (5) with chronic stenosis, due to contracting scar tissue, practice wide dilation, with persistent intubation; (6) consider Roentgen ray treatment as a possible adjunct in softening scars, causing chronic stenosis and avoid, if possible, tracheotomy as a means of curing a patient of a tube habit.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

MARTIN F. ENGMAN, M. D.

Etiology of Syphilis.—T. SHENNAN (*The Scottish Medical and Surg. Journal*, September, 1905).—This article contains a complete critical review of the discovery of the spirochæte pallida, and is of such value in the understanding of the various views upon this discovery that we believe it would be of value to reproduce it.

“The discovery of the cause of syphilis has been many times confidently reported. As Lassar remarked, during the discussion which followed the reading of the paper by Schaudinn and Hoffmann at the Berlin Medical Society in May: ‘One hundred and twenty-five causes of syphilis have been established during the last twenty-five years.’

“We are concerned here with the latest of these discoveries, one that gives strong hope that at last the search for the cause of this ancient and ubiquitous disease has been successful.

“The credit for the discovery lies with Schaudinn and Hoffmann, whose first paper appeared in the *Arbeiten aus dem kaiserliche Gesundheitsamte*. Later they gave fuller details in the *Deutsche med. Wochens.* and *Berliner klin. Wochens.*, and from these papers the following description is compounded:

“The authors draw attention to micro-organisms of the genus spirochæte, which they have found in primary and secondary syphilitic lesions, not only at their surface, but also in their deeper parts, and in the corresponding lymphatic glands. They saw them living—they remain alive for several hours in physiological salt solution—and also in smears from the tissue juice, fixed in absolute alcohol, and stained by a modification of Geimsa’s method.

Schaudinn holds that spirochætes are related rather to the protozoa than to the bacteria, and hence must be clearly distinguished from the spirilla. He describes two varieties, one found only in syphilitic lesions, the other saprophytic in nature, and constantly met with in stagnant secretions, such as occur about the genitals.

“The former, which he names spirochæte pallida, is extremely delicate, very refractile, vigorously motile, stained with difficulty and seen with difficulty, very high powers of the microscope—one-twelfth oil

immersion objective, with medium to No. 8 ocular—being required. It is long, very thin and filamentous, spiral or corkscrew shaped, with pointed ends. In length it varies from 4 to 10 m.; its breadth is difficult to gauge, being at most about 0.25 m.; the turns in the spiral number six to fourteen, averaging eight to ten. They are not only numerous, but very narrow, regular and deep. Some writers describe a nucleus, but this fact is not yet absolutely proved. It progresses by rotating on its long axis, and when at rest it shows undulatory movements in its whole length, suggestive of the play of a vibratile membrane.

"The second he names *spirochæta refringens*. It is larger, refractile, the turns of the spiral flatter, wider and more wavy or undulating than the corkscrew shaped. It stains well with Geimsa's agent.

"In addition to the difference in refractile power and general consideration, the *spirochæta pallida* differs from all hitherto described *spirochætes* (*spirochæta obermeieri*, *anserina*, *zeimanni*, *buccalis*, *refringens*, etc.) in its extraordinarily slight colorability with all stains which can be used for its detection. Moreover, the worker may have to spend at least an hour over a smear before a *spirochæta pallida* rewards his patient search.

"*Method*.—Hard sores were excised, cut into from below, the fluid expressed and smears made; or groin glands were punctured with a hypodermic syringe, and a small amount of fluid so obtained was treated similarly. It is known that the fluid from these indolent glands is effective (v. Kinecker and Bumm), hence it was hoped that its examination would disclose the cause of syphilis.

"In their first paper Schaudinn and Hoffmann report that they found *spirochæta pallida* in the surface lesions in seven cases of uncomplicated primary and secondary syphilis, and in four out of five cases of syphilis with complications, in three of which it was associated with *spirochæta refringens*.

"In eight cases of undoubted syphilis the *spirochæta pallida* was demonstrated in six smears from excised glands or in fluid obtained by puncture. In four cases complicated with gonorrhea, papillomata, soft sore and balanitis, in which, however, the glands had the characters of the syphilitic swelling, these contained *spirochæta* alone.

"Schaudinn also found *spirochætes* in blood from the spleen obtained during life on the day previous to the appearance of the roseolar rash.

"No *spirochætes* were found in soft chancres, buboes, or in carcinomatous, sarcomatous, or lupous tissues.

"After summing up their results these authors conclude that 'we are not far from finding the cause of the disease in this early form of life.'"

"*Results of Other Workers*.—Metchnikoff and Roux had already succeeded in infecting apes with syphilis, and now they found the *spirochæta pallida* in small numbers in local lesions in four out of six infected monkeys. They found them, moreover, in four out of six cases in man in recent scrapings of secondary papules, and also in one case of congenital syphilis. In control cases (psoriasis, scabies, acne etc.) they failed to find *spirochæta pallida*. They have not succeeded in cultivating the *spirochætes* and have small hopes of doing so. They concluded that *spirochætes* probably play an etiological role in syphilis.

"In the discussion of Schaudinn and Hoffmann's paper, Thesing sug-

gested that spirochaetes were developed in the stain. This was controverted by Weichselmann, Lowenthal, Schaudinn, and later by Giemsa, who suggested that what Thesing saw were crystals of methylene blue or methylene azure. This side issue is still being discussed. Buschke and Fischer found the organisms in the tissues of a congenital syphilitic infant, post mortem, and also in the blood of the same case taken during life. Non-syphilitic children gave negative results.

“Frosch found *spirochaeta pallida* in the blood from veins, Reckzeh found it in three syphilitics and failed to find it in two other non-syphilitic patients examined.

“Raubitschek detected the spirochaete in the circulating blood of syphilis.

“Krauss insists on the necessity of making a great number of preparations, the spirochaete pallida being often very irregularly and unequally distributed. He has never found spirochaete pallida in controls.

“R. Volk, on examining thirty-one syphilitic patients found the parasite in the great majority. The results were negative in thirteen out of fourteen syphilitic glands examined, and in seventeen controlled non-syphilitic lesions.

“Levaditi found spirochaete pallida in fluid from the bullae of syphilitic pemphigus, and also in another congenital syphilitic infant, three month's old, from the spleen, lungs, and, above all, from the liver.

“Salmon and E. Hoffmann confirmed these observations, and, in addition, the latter reports that Schaudinn and he have found these spirochaetes in papular syphilides, situated far away from the genitals; *e. g.*, on the breast and back.

“Babes and Panea report cases of congenital syphilis in which they found spirochaete pallida. It was demonstrated in the greatest numbers in the suprarenals. They believe that facts support the relationship of spirochaete pallida to syphilis.

“E. Hoffmann has found spirochaetes somewhat similar to spirochaete pallida in carcinomatous ulcers. He thinks that possibly some of these may be examples of the bacillus fusiformis.

“C. Fraenkel found the spirochaetes in six varied cases of syphilis, and writes enthusiastically in support of Schaudinn and Hoffmann; indeed, going further than they do. He has no doubt whatever as to the etiological relationship of spirochaete pallida to syphilis.

“R. Herxheimer and H. Hubner examined eighteen cases, in two of which the diagnosis was between soft sore and syphilis. These gave negative results, and the subsequent course of the disease justified this finding. In fifteen of the remaining sixteen they found spirochaete pallida, in one of these in sections of the tissues. This is so far unique. They failed to find them in glands, in blood, or in the organs of congenital syphilitic children.

“Rille, Baudi and Simonelli, Ploeger and Jensen were all successful in finding the spirochaete pallida in primary and secondary lesions and glands.

“Galli-Valerio and A. Lassueur refer to the results of other investigators and then give their own. They used Michaeli's stain, Ziehl's fuchsin, and Romanowsky's.

“They found the spirochaetes in specific condylomas and in mucous

plaques in five out of six syphilitics. They failed to find them in a mucous plaque, a gland, and a hard chancre. In these cases the organisms may have been in very small numbers.

They expressly note that Schaudinn and Hoffmann do not claim that these organisms are specific.

Wechselmann and Lowenthal found very short spirilla, three to four *m.* long, and ask whether the spirochaetes described by Schaudinn are not formed by the union of several such micro-organisms.

Vaillemín claims that spirochaetes are related to algae. Spirochaete pallida, on the contrary, is directly attached to the protozoa by Schaudinn, and Vaillemín proposes the name *spironema*.

McWeeney found spirochaetes in nine primary and secondary cases of syphilis. His results were negative in a tertiary ulcer of the palate, and in a non-ulcerating muco-purulent vaginitis. Jacquet and Sevin also failed to find spirochaetes in all tertiary lesions examined.

Gordon failed to detect spirochaetes in the fluid obtained by lumbar puncture in cerebro-spinal syphilis and in tabes with a distinct syphilitic history.

L. Spitzer found spirochaete pallida in six primary sores, in seven skin eruptions, in some cases even after long treatment. This is also the experience of others. He found them also in two cases of tertiary syphilis; in one case from distinctive infiltrations, and in the other from a gumma of the scalp. The latter case had had no treatment. No other observer has been successful in cases of tertiary syphilis.

McWeeney, Gordon and others suggest that tertiary lesions are caused by a chronic intoxication due to absorption of the metabolic products of the spirochaete. Spitzer's results were negative in eczema, pemphigus, psoriasis, verrucae plana and erythema nodosum.

All the authors referred to so far (the references are arranged to a certain extent in the order in which their papers appeared) support Schaudinn and Hoffmann. A very few are critical or even hostile.

R. Horand refers to his published works of a 'hemoprotiste' pathogenic agent of syphilis. The spirochaete described by Schaudinn appears to be identical with one of the involution forms of this 'hemoprotiste.'

Paltauf, discussing the relationship of spirochaete pallida to syphilis, emphasizes the fact (according to Schaudinn) that it is not of bacterial but of protozoon nature, and represents an involution form of a blood parasite. Still, while one recognized trypanosomes and spirochaetes as blood parasites, one did not know that they produced a form of granulation tissue such as is found in syphilis.

M. Schuller, in a review of Schaudinn and Hoffmann's communication as to the occurrence of spirochaete pallida in lymph glands, doubts whether it has a causative relationship to syphilis at all. He believes that he has seen these bodies years ago, but described them as bacilli (references to papers were given), and he cannot understand Schaudinn's reasons for placing them among the animal parasites. He suggests that they may be contaminating bacilli. He also criticises the technique employed.

Most of his objections have already been answered by the numerous workers already referred to, the strongest argument against them being

that the spirochæte *pallida* has been found only in syphilitic lesions, and never, except by Kiolomenoglou (v. postea) in many non-syphilitic conditions examined by similar methods.

"The most important paper on the negative side is that of Kiolomenoglou and von Cube, just referred to.

"In the first place they were able to confirm the occurrence of the spirochæte *pallida* in syphilitic lesions, but they considered it quite as important to confirm the absence of it in non-syphilitic lesions. In all their work they exercised the greatest care in making and staining their preparations.

"They found the organism in —

"First.—A collection of syphilitic cases.

"Second.—In the secretion from an inflamed phimosi. There may have been a masked primary lesion in this case.

"Third.—In pus from a gonorrhœal abscess in Bartholini's gland in a patient with leucoderma colli specificum.

"Fourth.—In simple balanitis.

"Fifth.—In pus from a serofulo-dermatic abscess.

"Sixth.—In the degenerating products of a suppurating cancer.

"Seventh.—In tissue-juice of a condyloma acuminatum.

"Negative results were obtained in an acute gonorrhœa, syphilitic blood, acne vulgaris, impetigo, phthisical sputum, etc.

"We do not hesitate to claim these bodies found in some non-specific cases as typical examples of the spirochæte *pallida*. . . . Particularly characteristic was the preparation from the carcinoma.

"We must not omit to state, however, that in all the above cases we found the spirochæte *refringens* as well. But we often found—and to this we attach great weight—in one and the same field, in addition to the typical forms of the spirochæte *pallida* and *refringens*, numerous atypical spirochæte forms whose characters correspond to neither of these. Some of them were not so long as spirochæte *pallida*, and had two to three flat wavy curves (cf. Wechselmann and Lowenthal), whilst in all other respects they were spirochæte *pallida*. Others stood midway between the two and it was impossible to correlate them with either.

"There seems to be quite a spirochæte fauna, especially frequent in stagnant secretions, so that we cannot resist the conclusion that spirochæte *refringens* and the above mentioned atypical forms are manifestly saprophytes. It must be remembered, however, that we have found spirochæte *pallida* as well in such secretions, and the idea that it also may be saprophytic is not at all, as yet, to be put on one side.

"They think that C. Fraenkel's conclusion that the spirochæte *pallida* is undoubtedly the cause of syphilis has been spoken rather too soon. We are at least not yet in the position to determine the characteristics distinguishing the spirochætes occurring in syphilis from those occurring in other conditions.'

"One may say in criticism, that, granting all this, it does not necessarily exclude the possibility (judging from the many important positive observations made) that spirochæte *pallida* may be the veritable cause of syphilis. It is a commonplace in bacteriology that many of the most important pathogenic organisms may occur in or on the body as

saprophytes, the conditions being unfavorable to the exercise of their pathogenic powers.

Summary.—Metchnikoff and Roux have proved that syphilis is transmissible to the anthropoid apes. Later, Schaudinn and Hoffmann described extremely delicate spirochæte forms in primary and secondary syphilitic lesions, and peculiar to syphilis. They were discovered in hanging drops or by making smears, and, after fixation in alcohol, staining by a modification of Giemsa's method.

"Metchnikoff and Roux found identical forms in the experimental lesions in monkeys. A considerable number of workers confirm completely the work of Schaudinn and Hoffmann. In addition, the spirochæte has been found in the blood and organs of congenital syphilitic infants, and in acquired syphilis in blood obtained by puncture of the spleen on the day before the roseolar rash appeared, showing that it reaches the skin through the blood vessels. It has later been found in the circulating blood. A body described as spirochæte pallida has been once seen in a section of a syphilitic tissue. In acquired syphilis it is found only in primary and secondary manifestations, practically never in the tertiary stage. Most authors agree that it is never found in non-syphilitic lesions.

"The balance of evidence seems to be in favor of the etiological relationship of spirochæte pallida to syphilis.

Staining Methods.—Most investigators have used Giemsa's stain, applied for long periods—one to fourteen hours—after fixation of the smears, which should be very thin, in absolute alcohol. Giemsa says that the optimum time for staining the spirochæte pallida is one hour. Davidsohn recommends cresyl violet R. extra. Reittmann stains with ordinary carbol-fuchsin, after heating film with phosphotungstic acid. Herxheimer and Hubner suggests nilblau B. R. or capriblau in 1-1000 aqueous solution, applied for sixteen to twenty-four hours. Metchnikoff and Roux and also Jaquet and Sevin recommend Marino's mixture.

"Hoffmann succeeded in demonstrating the spirochætes by staining with fuchsin and anilin water gentian violet. Some, *e. g.*, Openheim and Sachs, have succeeded with carbolic acid and gentian violet, and others with Romanowsky's stain. Dudgeon uses Leishmann's stain."

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

Improved Method of Treatment in Glaucoma.—K. SCOTT (*Caledonian Med. Jour.*, October, 1905).—The author assumes (we believe incorrectly) that the wide iridectomy of v. Graefe by destroying physiological action of the iris sphincter leads, in certain cases, to a gradual cessation of the function of the eye. In order to obtain a re-establishment of ocular drainage and at the same time to preserve the sphincter of the pupil, Scott has devised the following modification of iridectomy: He removes

the outer portion of the iris tissue up to the ciliary insertion of the radiating fibres of the muscle; in other words, "buttonholing" the iris after the fashion of the Chandler operation for cataract. Scott claims that his results are equally as good as with the classical iridectomy, but admits that the operation is difficult properly to perform.

Vernal Conjunctivitis.—SCHIECK (*v. Graefe's Arch. f. Ophthalm.*, LIX., 3).—An anatomic finding which may prove of value in the differential diagnosis between typical cases of vernal conjunctivitis and other affections of the conjunctiva has been discovered by Schieck. He finds that even in the first stage of vernal conjunctivitis there is present proliferation and swelling of the elastic fibres. He examined the anatomic changes in various affections of the conjunctiva—conjunctivitis hyperplastica, pterygium and trachoma—and found no similar changes.

On the Origin of Unilateral Vertical Movements of the Eye.—BIEL-SCHOWSKY (*Zeitsch. f. Augenh.*, 1905, Band XII., Heft 4).—A failure of binocular vision is prerequisite to the establishment of a unilateral vertical movement of the eye. Unilateral movements are independent of the will. The author's results, arrived at by experiment and theoretical considerations, point to the fact that, in addition to the cortical centres for associated eye movements, there exist for each eye secondary motor centres, independent of each other and of the will. Only when the influence of the cortical centre is in abeyance (sleep, narcosis), or in the absence or non-development of the fusion sense, can the secondary centres evoke unilateral movements of the eyes.

Enucleation Under (Combined) Local Anesthesia.—MEYER (*Klin. Monat. f. Augenheilk.*, February, 1905).—Cocain drops are used to anesthetize the eye sufficiently for cutting the conjunctiva and the muscles. The slightly curved tip of an Anal syringe, charged with Schleich II, is then introduced to the vicinity of the posterior pole and the contents discharged. The optic nerve is sectioned two minutes later.

The Physiological Action of Dionin.—W. H. SNYDER (*Jour. A. M. A.*, November 18, 1905).—The general physiological action of dionin is somewhat similar to that of morphin, but it is less toxic and does not produce nausea, constipation, or habit. Applied to the eye it evokes sneezing, vasodilation, edema, glandular excitation, burning and lachrymation, and supposedly lymphatic extravasation, followed by analgesia, lasting from two to forty-eight hours.

Dionin (in powder) was placed in the eyes of a medium sized albino rabbit. The reaction was moderate, giving the usual appearance, only less in degree. The rabbit was killed and the eyes placed in formol. Sections were cut from the cornea through the ciliary region to the nerve. The sections showed (1) dilatation and edema of the lamellar spaces in the substantia propria. The spaces at the junction of the cornea and ciliary region which corresponded to the spot at which the powdered dionin was placed, showed the greatest dilatation; (2) the effect was the greatest on the outer side of the cornea; (3) the adjacent

muscle was not affected. A section of conjunctiva, after dionin, showed no round cell infiltration or evidence of edema, a fact suggestive of the contention that the tissue changes are found only where there is tension.

Snyder believes that the action of dionin is purely local, and is greatest where the drug has actually rested. Its most marked action is in eyeballs in which the tension is increased. The appearances observed are best explained by assuming a disassociating action on the intercellular cement substance, thus allowing a transudation of serum from a globe under pressure. Its analgesic action is to be explained by its lessening of tension and by the well known analgesic action of the derivatives of morphin. The writer contends that the interlamellar fluid is primarily serous, and that the drug is only secondarily a lymphagogue. His personal experience leads the writer to recommend dionin in the following conditions: Iritis with adhesions and plus tension; recent corneal ulcers, especially the peripheral type; beginning pannus (in addition to lid treatment).

In glaucoma, dionin is preferred to eserin. The use of the drug in powder form is advised.

SOCIETY PROCEEDINGS.

ST. LOUIS SURGICAL SOCIETY.

Meeting of April 12, 1905.

Dr. N. B. Carson read a paper entitled "A Plea for Early Operation in Gastric Cancer," for which see page 849.

DISCUSSION.

Dr. Justin Steer, speaking of the early diagnosis of cancer of the stomach, said it was a very difficult thing to do as yet. Lactic acid he did not always find, but he did find pretty constantly the bacillus of Oppler-Boas. Diagnosis of early cancer is still in its infancy. He knew of no cardinal points on which we could base a diagnosis. Probably the most reliable symptoms which would lead us to suspect cancer of the stomach are constipation, loss of strength, loss of flesh, and cachexia.

Dr. Fischel said he was not willing to accept the notion that everything that is good is surgical, or that which is not "ain't." He had his doubts whether physicians, and particularly surgeons, who, recognizing in themselves stomach symptoms which are suspicious, would be willing easily to submit to the knife for diagnostic purposes. Believing that to be true, are we not in danger of advising our patients too readily to undergo a radical operation? In the case which Dr. Carson reported there was every reason to recommend operation. The diagnosis, whether ulcer or carcinoma, could not be made with certainty. The patient's nutrition was much impaired because of a fear to eat—food always bringing on a paroxysm of pain. He had seen this patient some two months before he came under Dr. Steer's or Dr. Carson's care. At that time he advised an exploratory operation because, although there was then no tumor palpable, he was not at all certain that there was not a malignant neoplasm. The patient at that time was in fairly good condition, and Dr. Fischel believed his chances for recovery would have been good. Evidently the patient grew rapidly worse in the past six or eight weeks. The perforation certainly took place since the speaker had seen him. Dr. Fischel thought that patients with chronic ulcer of the stomach should be jointly watched by the physician and the surgeon. Postponement of operation after it is indicated is dangerous because of the possibility of hemorrhage, perforation, or great impairment of the patient's general nutrition. The rule for early operation applies even with greater force in strictures at the pylorus.

Dr. Tuholske said Dr. Carson had been kind enough to ask him to look over his hospital records referring to malignant disease of the stomach, and he had given to Dr. Carson a statement of the partial gastrectomies with gastro-enterostomies. There were eleven gastro-enterostomies for carcinoma, and a number for non-malignant cases; then quite a number for which he had made simply an exploratory operation, and a number in which he did not make any exploratory operation. Among these was one which he had begun as an exploratory operation with the feeling that he was dealing with a carcinoma at the pylorus because of the absence of hydrochloric acid and the presence of the other usual symptoms. He opened the abdomen and found the pylorus enlarged and thickened, and believed it to be carcinomatous. He cut into the pylorus and found it very much thickened, and the mucous membrane looked suspicious to the naked eye. A small section was examined under the microscope at the time of operation, and the verdict was non-malignancy. He then completed the operation by a pyloroplasty, and the patient got well and is well now, a matter of over three years.

In regard to cancer of the stomach situated near the pylorus, the speaker said there were some things not receiving the amount of attention which they should. If with the suspicious symptoms we should find a tumor about the situation of the pylorus, we will do well to remember that thickening and enlargement due to an ulcer are very apt to be found with a tumor not movable, held down by adhesions. If it be an early pyloric cancer there will be vastly more mobility of the pylorus than there is in ulcer. In ad-

vanced cases of ulcer, mobility will be reduced, and absolutely so when there has been perforation. So far as the management of ulcer is concerned, Mayo Robson says that of the cases of carcinoma examined, six per cent. were on the basis of chronic ulcer, and therefore he believes that in chronic ulcer of the stomach with great rigidity of the walls, preventive resection should be done.

In his own cases Dr. Tuholske said one patient lived about a year, one about ten months, one about eight months, and others less than three months. He did not know that the life of the patient would be prolonged by the operation, but he was very certain that it had increased the comfort of the patient. He believed the operation of gastro-enterostomy was the best one, unless it be one that he had performed twice, the operation known as the French operation. In this operation the jejunum is cut near the duodeno-jejunal portion and sewed there, which gives a Y which has a distinct tendency to prevent the *circulus vitiosus*. As to the point that when the pylorus is closed there will be no closure or contracture of the gastro-enterostomy opening, he said that in one of his cases he had not only closed, but cut out the pylorus, and made a resection of the stomach. The patient lived a long time, and at the post-mortem he found that the opening he had made, which was one and three-quarters of an inch in length, had been reduced to the size of a lead-pencil, and he believed if the patient had not died then of another trouble there would have been closure. Contraction of the opening is the rule rather than the exception. He believed the mobility of the pylorus in early carcinoma, its fixity and thickening in ulcer, deserve consideration. It had been his good fortune to see the first operation of resection done by Billroth, and the first one done of gastro-enterostomy by Wollter, in 1881, and, looking for a suitable case, he was the first surgeon in this country to do the combined operation of pylorectomy and gastro-enterostomy. Exploratory operations in suspicious cases are not done often nor searchingly enough. With the still great difficulties of diagnosis, give the patient the benefit of the doubt and perform the exploratory operation, prepared to do such operation as may be indicated or to close promptly.

Dr. Carson, in closing, said he felt that the findings justified him in doing just what he had done. This conclusion was borne out by the findings of other surgeons such as Czerny, Mayo Robson and others. In regard to Dr. Fischel's statement that often tumors of the large curvature are taken for carcinoma and excised, there are a number of cases reported where operations have been done and the condition has been found, or found that a mistake has been made, and an anastomosis made, and the patients have recovered and lived many years, proving conclusively that it was not a malignant disease, but simply an ulcer.

Another point is, that there are cases where sharp objects are taken into the stomach and cut the mucous membrane, causing hemorrhage and producing symptoms which are taken for cancerous disease. He had done the exploratory operation in five cases, and all had recovered without ill results, the patients simply being confined to bed for a few days, but he had settled conclusively the existing condition. In 1882 he made an exploratory operation, and found so much of the stomach involved that it was best to go no further with the operation. And so in other cases he found the operation not advisable, and then he simply closed the wound and the patient was out of bed in a few days, but he had the satisfaction of knowing that nothing could be done. While the operation was performed in the case reported, and while it was possible the patient might have recovered, the speaker could not help feeling that, under the circumstances, he had done everything that could be done. He did not think the operation should be urged strongly, but he thought it should be advised and explained that it is for the purpose of making a diagnosis and determining whether the condition is malignant or non-malignant. Mistakes are made sometimes, and some patients get well without operation, but when we take into consideration the great number who do not get well, and who suffer and die as these patients do, he could not help feeling that the exploratory operation is less harmful and less dangerous than waiting, which results in the majority of patients coming too late for the operation to be of any benefit.

BOOK REVIEWS.

PHYSICIAN'S DESK ACCOUNT BOOK. By J. J. TAYLOR, M. D. Published by the Medical Council, Philadelphia, Pa.

This account book is especially designed for the physician's desk, and is so arranged as to facilitate the entering of accounts and the sending out of bills. The same author has arranged an accompanying Physician's Pocket Account Book, equally as practical. For those who use this method of keeping accounts, the volume will prove most useful.

A MANUAL OF DISEASES OF THE NOSE AND THROAT. By CORNELIUS GODFREY COAKLEY, A. M., M. D., Professor of Laryngology in the University and Bellevue Hospital Medical College, New York City, etc. Third edition, revised and enlarged and illustrated with 118 engravings and 5 colored plates. Lea Brothers & Co., New York and Philadelphia. 1905.

This edition is along the same lines as the previous editions. The work has been somewhat enlarged and more profusely illustrated. Special attention has been given to the sections on Examinations, Diagnosis and Treatment. The chapter on Diseases of the Accessory Sinuses has undergone a thorough revision. The author is an adherent of trans-illumination and believes it to be a very valuable aid in diagnosing acute and chronic suppuration of the antrum and frontal sinuses.

This is a very handy little work of reference for the student, as well as for the general practitioner.

MALARIA, INFLUENZA AND DENGUE (NOTHNAGEL SERIES). By DR. JULIUS MANNABERG and DR. O. LEICHTENSTERN. Authorized translation from the German under the editorial supervision of ALFRED STENGEL, M. D. Philadelphia: W. B. Saunders & Company, 1905.

The Nothnagel series has become so well and favorably known to the profession that comment concerning the great value of the work is unnecessary. The volume in hand is devoted to the subjects of malaria, influenza and dengue. But few changes have been made in the subject-matter, and the translator has adhered as closely as possible to the original text. Prof. Mannaberg has probably presented here the most comprehensive and learned treatment of the history, symptoms and treatment of malaria that has ever been published in one volume. The chapter on malaria, in its relation to the mosquito, was written by J. W. W. Stephens in order to correct the views and arguments based on the miasmatic theory of the origin of malarial infection which the discovery of the part played by certain mosquitoes in transmitting infection has rendered untenable. The work, therefore, has been brought quite up to date in every particular.

THE CLINICAL STUDY OF BLOOD PRESSURE. A GUIDE TO THE USE OF THE SPHYGMOMANOMETER. By THEODORE C. JANEWAY, M. D. New York and London: Appleton & Company, 1904.

A knowledge of blood pressure in various diseases seems now to be of the greatest importance. Inasmuch as the procedure is a comparatively new one to the clinician, and depends upon careful technique, such a work as this was greatly needed.

It is divided into three parts, viz., the physiological, technical and clinical.

A careful perusal of the volume will enable one to conduct the work with entire satisfaction. The various sphygmomanometers are described and criticised, and the technique of their application minutely detailed.

INDEX.

ASTERISKS (*) DENOTE ORIGINAL ARTICLES.

A		
SUBJECT	AUTHOR	PAGE
Abdominal disease, pleurisy in diagnosis of.....		420
systolic murmur.....	Calvert.....	474
Abscess of liver, urine in.....	Axisa.....	874
perineal, treatment.....	Alexander.....	888
peritonsillar.....		503
Acanthosis nigricans.....	Hodara.....	707
Acetone in urine, test for.....		621-747
uses of.....	Posey.....	288
Accessory sinuses of nose.....		764
Achondroplasia.....		217
Acid, lactic, test for.....		748
Acrodermatitis.....	Herxheimer.....	571
Acromegaly, etiology.....	Lewis.....	565
Actinomycosis.....	Matlack.....	453
Addison's disease, roentgen ray in.....		553
Adrenalin in hemorrhage.....		305
in glaucoma, danger in.....	Senn.....	574
Aestivo-autumnal infection.....	Pomeroy.....	421
Albuminuria and artificial abortion.....	Veit.....	693
from palpation of kidneys.....		622
Albumosuria in gastro-intestinal disease.....	Ury.....	346
Alcohol, effects on rabbits.....	Friedenwald.....	754
Amaurotic family idiocy.....	Schafer.....	565
Amphibia, regeneration in.....		288
Amputation, interscapulo-thoracic.....		280-618-743
neuromata*.....	Manley.....	324
Anatomy of congenital dislocation of hip*.....	Allison.....	784
of small intestines.....	Monks.....	871
Anesthesia, local.....	Bodine.....	872
Anesthetic, general, seopolamin-morphin, an adjuvant.....	Seelig.....	685
Aneurisms, cardiac.....	Mendes.....	485
Aneurysm of external iliac, ligation for.....	Currie.....	424
popliteal.....	Faure.....	425
Angina pectoris, changes in heart following attacks.....	Kering.....	278
Angioma, treatment of.....	Krogius.....	872
Annual report of Surgeon-General, 1904.....		290
Antibacteriolytic substances of normal sera.....		209
Anti-bodies, new method of obtaining.....		209
Antipyrin in optic atrophy.....	Valude.....	448
Aorta, ligation of.....	Katzenstein.....	548
Appendicitis, acute.....	Grant.....	263
care of stump in.....	Corruin.....	349
expectant treatment.....	Bernays.....	482
leucocyte count in.....		203
peculiarities in female.....	Heaton.....	629
position of patient in operation for.....	Foersterling.....	685
significance of hematamesis.....	Sick.....	21
time to operate.....		615-746

SUBJECT	AUTHOR	PAGE
Appendix, vermiform, removal of.....		345
Aristochin in children's diseases.....		362
Aristol oil.....	Daxenberger.....	572
Arterio-sclerosis and mental disease.....	Barret.....	886
Arthritis, acute.....	Hutan.....	436
deformans.....	Richardson.....	363
gonorrheal, treatment.....	von Tilling.....	563
of knee, treatment.....		566
Asphyxiated infants, resuscitation of.....		291
Assimilation and heredity.....	Hamberger.....	289
Asthenopia.....	Hallet.....	839
Asthma, hysterical and hysterical mutismus.....	Stintzing.....	500
in childhood.....	Barbarin.....	561
Atresia of vagina.....	Gellhorn.....	735
Atrophy, optic, antipyrin in.....		448
Aural affections in children.....	Jarecky.....	362
Auscultatory percussion of lung.....		551
Autointoxication, digestive.....	Thomas.....	695
B		
Bacilli, bovine and human, staining of.....	Spengler.....	749
typhoid, effects of.....		431
Bacillus fusiformis, experiments with.....	Veszpremi.....	356
toxin of dysentery.....		491
Basedow's disease.....	Lomer.....	688
disease, operative treatment of.....	Eriedheim.....	812
disease, pathology.....	Paessler.....	279
treatment of.....		887
Bassini operation, modification of.....	Polya.....	349
Beri-Beri.....	Wright.....	819
Biceps, rupture of tendon.....		634
Bile duct, loss of continuity.....		683
pigment, simple test for.....	Presslich.....	351
reflux of after gastroenterostomy.....	von Cackovic.....	619
Biliary concretions.....	Fantino.....	620
passages, rupture of.....		200
Bladder, foreign bodies in.....	Chevalliere.....	280
segregators.....		302
wounds of.....	Evans et al.....	704
Blindness, night congenital.....	Sinclair.....	838
Blood, alkalimity of in disease.....	Kireef.....	546
examination after removal of adenoids.....	Takabatke.....	372
loss of during menstruation.....		212
new test for.....	Schilling.....	285
origin of.....	Neisser et al.....	878
pressure in disease.....	Morris.....	276
pressure in neuroses.....	Hascovec.....	552
vessels of lymphatic gland*.....	Calvert.....	771
Bone, formation of in struma.....	Sehrt.....	423
marrow in typhoid fever.....	Longcope.....	492
Bossi method and general practitioner.....	Duehrssen.....	630
Bovine tubercle bacilli, staining of.....		749
Breast, cancer of.....		200
Bright's disease, treatment.....		624-637
Bronchial colic.....	Muszcak.....	615

SUBJECT	AUTHOR	PAGE
Bronchial lymph nodes, enlarged, diagnosis of.....		350
Bronchitis, treatment.....	Heubner.....	286
Burns, death from, etiology of.....	Pfeiffer.....	752
treatment of.....		619
Buttermilk in infant feeding.....		215

C

Cæsarian section on the dead.....	Bourdzynsky.....	880
Calculi in ureter, detection of.....	Cabot.....	441
Calculus, renal.....		638
Cancer, cell inclusions in.....	Greenough.....	375
implantation of tissue.....	Nichols.....	374
in advanced pregnancy.....		212
in mice, inhibition of development.....	Clowes.....	445
of breast, operative treatment.....		200
of rectum, treatment.....	Hartwell.....	745
of stomach.....		741
statistics, reliability of.....		417
treatment of.....		839
Carcinoma.....	Koenig.....	682
cure of with x-ray*.....	Wohlgemuth.....	733
of prostate, radical cure of.....	Young.....	831
of stomach.....		484
of uterus.....	Warrington.....	701
Cardiac dilatation.....	Selig.....	742
Cardiaptosis.....	Einhorn.....	422
Cargile membrane, study of.....	Craig et al.....	550
Cartilage in knee-joint.....		296
Casts in normal urine.....	Gentzen.....	750
Cataract, choice of operation.....	Risley.....	307
posterior cortical.....		227
Catgut, sterilizing of.....	Bartlett.....	270
Cathartics, danger from use.....	Harris.....	282
Catheters, disinfection of.....		760
Caustics, use of.....	Chrobak.....	435
Cells, staining of.....	Jagic.....	875
Cerebro-spinal meningitis, communicability of.....	Buckingham.....	420
treatment of.....		354-559
Chalazia, operation in.....	Antonelli.....	709
Child, natural immunity of.....		294
Chloroform anesthesia.....	McAllum.....	872
Cholecystitis*.....	Wiggins.....	260
typhosa.....	Doerr.....	810
Choriœpithelioma, characteristics of.....	Hoermann.....	558
Choroid, melanoma of.....		387
sarcoma of.....		644
tubercle of.....	Carpenter et al.....	768
Choroiditis, metastatic.....	Chaillous.....	508
Cicatricial contraction of hand.....	Stone.....	364
Club-foot, paralytic.....	Saxl.....	697
treatment of.....		298
Colic, pathogenesis of.....	Nothnagel.....	547
Colitis, primary.....	Kokoris.....	546
Colon, chronic spasm of.....	Schuetz.....	809
conformation in nursling.....	Saias.....	559

SUBJECT	AUTHOR	PAGE
Conchotomie	Rindfleisch	704
Condyloma accuminatum	Sprecher	707
Congenital enterocyst*	Tupper	671
dislocation of hip, anatomy of		784
dislocation of hip, treatment		218
results of bloodless reposition	Hoffa	297
of shoulder		498
Conjunctivitis petrificans	Posey	508
vernal	Schieck	898
Constipation	Glaesner	421
treatment	Albu	554
treatment	Schmidt	876
Cord, virliligo of central canal	Ferrio	367
Cornea, syphilide of	Antonelli	508
Corneitis, peritomy for		447
Correspondence		341
Coryza, acute, treatment of	Henle	444
Coxalgia	Taylor	757
Coxavara, treatment	Lille et al.	698
Cyst, dermoid, near shoulder		281
of mesocolon	Hartmann	685
of turninate	Schatz	763
Cystic degeneration of ovaries	Edit	344
Cystoscope in prostatic hypertrophy		222
Cystoscopes		370, 703
Cystoscopic images, righting of	Denis	501
Cystoscopy and renal lavage	Johnson	568

D

Death, sudden in children		214
Defective, the relation of to the community		402
Deformity, lengthening limbs in		438
the silver fork	Allison	188
Delivery, paresis after	Stein	435
Dementia paralytica	Soukanoff	886
paralytica, ocular signs of	Holden	887
praecox	Sachs	564
praecox, epileptic attacks in	Masoin	759
Dermatology and syphilis, review of progress in	Engman	127
Dermatitis, blasto-mycitic	Lyle	835
Dermoid cyst near shoulder	Delageniere	281
Diabetes mellitus, treatment		205, 623, 664
mellitus, cure of		197
new test of urine	Strzyzowski	552
Diabetic urine, new test for acid	Riegler	285
Diagnosis between cerebral tumors and hydrocephalus	Finkeinberg	701
cardiac	Selig	749
differential between gall stones and cancer of pan- creas		201
errors in	Bradford	875
of diphtheria		351
of enlarged bronchial lymph nodes		350
of kidney disease		396
physical, tuning form in	Wilson	427
of renal calculi	Fowler	303

SUBJECT	AUTHOR	PAGE
Diagnosis of renal tuberculosis		283, 353
of retraction of apex of lung		285
of tuberculosis.....		748
of typhoid fever.....		869, 874
of ureteral calculi.....	Fowler.....	303
of urinary calculus*.....	Lewis	714
of urinary tuberculosis.....		638
of variola.....		432
Diarrhœa in infancy, etiology	Dunn.....	694
Diazo reaction in diseases of children	Kephallinos.....	687
Difference, the	Editorial.....	542
Digby, Sir Kenelm*	Ball.....	533
Digestion in infants, disturbance of.....		215
Digitalis, intravenous injection		877
Dilatation of heart.....		346, 742
of stomach	Neck	810
Dionin, action of	Snyder.....	898
Diphtheria and tetanus	Bobonneix	622
laboratory diagnosis.....	Schaps	351
laryngeal, complications in.....	Royer.....	891
laryngeal		458
of pharyngeal tonsil, primary.....		294
tendo Achilles, jerk in.....		635
Disease of antrum, iodoform in		226
Disinfection of catheters.....		760
Dislocation of hip, congenital.....		828
of hip, congenital, treatment.....		218, 297
of hip, determination of.....		43
of hip, double		499
of patella		216
of semilunar cartilage of knee.....		297
of shoulder, congenital.....		498
Drug intoxication.....	Bosc	882
Duct, common bile, loss of continuity.....	Mayo.....	683
thoracic, wounds of.....	Vautrin.....	684
thyro-glossal, fistula of.....		199
Duodenal ulcer.....		201
Duodenum, perforation of	Tuffier	427
Dysentery bacillus, toxin of	Luedeke	491

E

Eclampsia toxines.....	Dienst	434
treatment of	Vasale	493
Ectropion, senile, treatment of.....		227
Eczema, infantile, etiology	Hall	642
syphilitic vegetations upon.....		446
Edema of skin, histologic studies.....		288
Editorials, the medical.....		479
Emboli, fate of.....	Schmorl	694
Empyema of frontal sinus.....	Freudenthal.....	371
of mastoid	Shambaugh	763
Embryoma	Fischer	752
Enchondroma of tongue.....	Routier.....	483
Endocarditis, etiology.....		615
Entero-anastomosis, lateral.....	Kuester	745

SUBJECT	AUTHOR	PAGE
Enterocyst, congenital		671
Enteroptosis	Einhorn	422
Epididymitis, pathogenesis of	Oppenheim et al.	703
Epilepsy and eyestrain	Spratling ..	758
etiology of		220
sympathectomy for relief of	Park	440
Epileptic attacks in ovarian tumor		756
Epiphysis, separation of		497
Equinus, correction of	Schultze	498
Ergot, intravenous injection	Sollmann et al.	689
Erosion of transverse sinus in otitis	Lebram	641
Esophageal stricture	Morfit	183
Esophagoscope in dilatation of stenosis	Reizenstein	48
Esophagoscopy	Neumann	833
Esophagus, diseases of, use of supra-renal preparations in		199
foreign bodies in		833
foreign bodies in, treatment of		200
Ethylchloride in nose, throat and ear	Neunbon ..	372
Etiology of death from burns		752
of smallpox	Siegel	555
of syphilis	Shennan	892
Exophthalmic goitre*	Toholske	239
Exophthalmus, bilateral		277, 371
intermittent	Posey	308
Exstrophy of bladder	Sherman	760
External ear passages, anesthesia of	Laval	569
Eye, enucleation		228, 898
origin of movements	Bielschowsky	898
Eyestrain and epilepsy		758
importance and limitations	Walton	708

F

Face torn away	Kacosi	484
Family spastic paralysis	Holmes	439
Favus, behavior on the organism	Citron	357
Feeding of infants, buttermilk in		215
Femur, separation of epiphysis	Cottam	497
Fetal heartsounds in early pregnancy		822
Fetal organs, pregnancy reaction of		210
Fever, menstrual of tuberculosis	Sabourin	693
puerperal		357
scarlet, streptococcus in	Detot et al	495
typhoid		221
typhoid, quinine in		751
Ficker's typhoid diagnostic		210
Fistula of thyro-glossal duct		199
Fistulæ, biliary	Patel	871
Fixed vertebral points	Muskens	636
Flatfoot, relation of tibialis anticus to	Giani	756
therapy of	Antonelli	439
Fluctuation	Reclus	428
Food, preservatives and adulterations	Wiley	485
Foot, valgus position of		498
Fordyce's disease	White	374

SUBJECT	AUTHOR	PAGE
Foreign bodies, extraction through esophagus.....	Starck.....	347
in bladder.....		280
Foreign body in larynx.....	Holdmoser.....	504
stomach.....	McLeod.....	744
trachea.....	Pollmann.....	477
Formalin in disinfection.....	Rosenberger.....	760
Fracture of carpal scaphoid, treatment.....	Codman et al.....	633
of radius, deformity in.....	Robarts.....	562
of spine.....	Burrell.....	883
Friedreich's ataxia, pathology of.....	Rainy.....	440
Frontal sinusitis.....	Thomson.....	835
Functional cardiac diagnosis.....		749

G

Ganglion, Gasserian, operation on.....	Cushing.....	349
superior cervical, resection of.....		744
Gastric analysis, source of error in.....	Bartenstein.....	747
tetany.....	Edenhinzen.....	810
Gastroenterostomy, new method.....	Gould.....	279
Gastrostomy and jejunostomy.....	Acre.....	813
Genito-urinary surgery, review of progress.....	Johnson.....	118
Giant magnet, correct use of.....	Haab.....	645
Glands, mesenteric and tuberculosis.....		742
Glaucoma, danger of adrenalin in.....		574
iridectomy in.....		447
treatment of.....	Scott.....	897
Glycosuria after ether narcosis.....	Roehricht.....	813
following use of quicksilver.....	Fauconnet.....	54
Goitre, indications for operation.....	Schwyzler.....	282
Gonococcus infection, general.....	Wynn.....	369, 421
in children.....	Holt.....	560
staining of.....	Broennum.....	748
Gonorrhœa, treatment.....	Valentine.....	761
Gonorrheal rheumatism.....	Fuller.....	566
Grave's disease, unnoticed symptom of.....		202
Gout, treatment.....		488
treatment of.....	Noorden et al.....	869
Gynecology and obstetrics, review of progress.....	Ehrenfest.....	54

H

Harvey, William*.....	Lyon.....	790
Hay fever, radical operation in.....	Howe.....	891
Hearing, tests for.....		444
Heart, dilatation of.....		346
dorsal auscultation of.....	Libensky.....	285
test for disease of.....	Herz.....	426
Hematoma in tendon sheaths.....	Kuettner.....	283
Hemiplegia, organic and hysteric.....		579
Hemophilia in women.....	de Bovis.....	880
Hemorrhage following tonsillotomies.....		445, 569
in skin, treatment.....		305
nasal, postoperative.....	Wilcox.....	444
Hemorrhoids, gangrenous, treatment.....	Baracz.....	550
Hemoptysis, nose and larynx in.....	Preobrashensky.....	371
treatment of.....	Hochhang.....	287

SUBJECT	AUTHOR	PAGE
Hepatic duct, surgery of		348
Heredity ad assimilation		289
Hernia, local anesthesia in operation		872
of umbilical cord.....	Griffith	494
radical cure.....		348, 484
Herpes zoster, age incidence.....	Evans	765
Hip, congenital dislocation of		218, 438, 439, 633
congenital dislocation of		784
dislocation, double	Steele	499
determination of.....	Stewart	437
joint disease, early operation.....	Huntington	635
joint, congenital dislocation of.....		828
Histologic fixation, theory of	Berg	433
researches in dermatology	Vignoli-Lutati	571
Holding breath spells in children.....	Neumann	824
Hot air baths in ophthalmic practice.....	Ostwalt	447
Hydrophobia	Wilcox	289
Hydrocephalus and meningitis		758
Hypermetropia in refraction work.....	Dixon	573
Hypertrophied prostate, operation in.....	Mudd	651

I

Idiocy, amaurotic family.....		299, 300
Immunity of child, natural.....	Schuetz.....	294
reactions	Zupnik	879
Incontinence as sequel of prostatectomy.....		442
Indican, new test for	Gurber.....	816
Infants, asphyxiated, resuscitation of.....	Schultze.....	291
Infection, paratyphoid*.....	Taussig	337
resistance to.....	Renner	870
Inflammation of throat, septic.....		225
Influenza in childhood	Spielgelberg	436
Injuries of uterine wall during childbirth.....		211
Internal medicine, review of progress in.....	Myer.....	1
Interstitial anastomosis.....	Gatti.....	567
Intestinal obstruction, operative treatment.....	Simon	549
toxemia*.....	Friedlander.....	338
tuberculosis in nurslings.....		631
Intestines, large, surgery of.....	Pantaloni	423
Intravenous digitalis therapy.....	Mendel	877
Intussusception, melaena a sign of.....		436
Iodoform emulsion in antral disease.....		226
Iridectomy in glaucoma.....	Cheney	447
Iritis, recurrent.....	Woods.....	768
syphilitic of.....	Aubineau	838
Ischochymia	Einhorn	869

J

Joint contractures, pathology of.....		756, 757
disease, tuberculous*.....	Lones.....	658
inflammations.....	Drehmann	757
Jejunum, peptic ulcer of.....		199

SUBJECT	AUTHOR	PAGE
K		
Keratitis disciformis.....	Posey.....	574
Kidney, albuminuria from palpation of.....	Schreiber.....	622
detection of calculi in.....		441
disease, diagnosis of*.....	Robertson.....	396
function, determination of.....	Willar et al.....	888
injuries to.....	Habs.....	482
lavage in treatment.....	Johnson.....	442
movable.....		202, 462
operations on.....		301
position after nephropexy.....	Goelet.....	501
resorption in.....	Lindemann.....	49
tuberculosis of.....		502, 638
Knee, dislocation of cartilage.....	Schlatter.....	297
joint, contusion of.....	Flint.....	827
joint, slipping cartilage in.....	Owen.....	296
Koplik's spots in measles.....		552

L

Labor problem.....	Editorial.....	739
Lactation, optic neuritis during.....	Derby.....	307
Lactic acid, new test.....	Croner et al.....	748
Laryngeal diphtheria.....	Wilson.....	458
Laryngology and otology, progress in*.....	Sauer.....	139
Larynx, foreign body in.....	Holdmoser.....	504
tuberculosis of.....		503
Lavage of renal pelvis.....	Johnson.....	889
Leg, embryoma of.....		752
Leprosy.....	Little.....	304
cure of.....	Dyer.....	689
Leucocyte count in appendicitis.....		203
Leukemia, myeloid.....	Arusperger.....	278
Lichen pilarus.....	Adamson.....	506
Ligation of jugular vein.....		743
Living child, perforation of.....	Katz.....	558
Locomotor ataxia, treatment.....	Liebermann.....	366
London Practitioner, special number.....	Editorial.....	345
Lung, auscultatory percussion of.....	Velden.....	551
diagnostic puncture.....		747
retraction of apex.....	Sorgo.....	285
Luxation of shoulder, treatment.....		698
Lymph nodes, suppuration of.....		497
Lymphatic gland, blood vessels of.....		771

M

Malaria, fight against.....	Galli.....	488
Massage, employment of the blind.....	Bowditch.....	562
process, tuberculosis of.....		225
Maternal impressions.....	McMurrich.....	493
Mastoid inflammation, treatment of.....		890
Maxillary sinus disease, treatment.....	Gerber.....	443
McGraw's ligature, the.....	Ochsner.....	815
Measles, experimental.....	Hectoen.....	355
Koplik's spots in.....	Bruning.....	552
Mediastinum, posterior, surgery of.....		425

SUBJECT	AUTHOR	PAGE
Medical book review, the.....	Editorial.....	343
histories.....	Editorial.....	543
inspection of public schools.....	Chase.....	486
Progress number, the.....	Editorial.....	163
society, the.....	Editorial.....	805
Melæna, sign of intussusception.....	Vernon.....	436
Melanoma of choroid*.....	Thompson.....	387
Meningitis, conditions mistaken for.....	Baumann.....	292
and hydrocephalus.....	Hildesheim.....	758
purulent.....	Hinsberg.....	834
Menorrhagia, treatment.....	Colman.....	629
Menstrual fever in tuberculous women.....		873
Menstruation, loss of blood during.....		212
Methylene blue eosin blood stain*.....	Crandall.....	319
Milk pure.....		418
Mind and nervous system, relations of*.....	Chaddock.....	245
Modern surgery, dangers of*.....	Block.....	330
Molluscum contagiosum.....	Oppenheimer.....	507
Motor nerves, conservation of*.....	Blair.....	602
Movable kidney.....		202, 462
Multiple sclerosis.....	Muller.....	700
Myasthenia gravis.....	Burr.....	367
Myoma and Menopause.....	Winter.....	693

N

Nephritis in childhood, treatment of.....	Weigert.....	823
scarlatinal, urotropin in.....		205, 553
uremia in.....	Bouchet.....	881
Nerve transplantation.....		217
ulnar, section cured.....		549
Nervous system, histogenesis of.....	Schultze.....	556
relation to regeneration.....	Rubin.....	288
semeiology of diseases*.....	Babinski.....	167
Neuralgia, trifacial.....	Delbet.....	744
trifacial.....	Canfield.....	834
trigeminal.....		349
Neurological surgery, special field.....	Cushing.....	347
Neurology, review of progress*.....	Schwab.....	100
Neurons, toxic degeneration of.....	Donley.....	636
Nevus, treatment.....		304, 305
New department, a.....	Editorial.....	196
medical St. Louis.....	Editorial.....	195
Nodules, syphilitic.....	Darier.....	446

O

Ocular muscles, lengthening.....	Landolt.....	376
Olive oil in diseases of stomach.....	Blum.....	546
Operation, Bassini, modification of.....		349
for cataract.....		307
on kidney and ureter.....	Brewer.....	300
Operations for radical cure of hernia.....		348
for relief of hay fever.....		891
Ophthalmology, review of progress*.....	Green.....	149
Optic atrophy from male fern extract.....	Meyer.....	645
neuritis during lactation.....		307

SUBJECT	AUTHOR	PAGE
Organic and hysteric hemiplegia*	Babinski	579
Orthopedic surgery		884
portable apparatus in	Ghiulamila	365
Orthopedics, review of progress*	Allison	89
Osler's address	Editorial	274
Ostealgia	Riga	870
Osteology and the general practitioner*	Blair	536
Otitis media	Hemer et al	570
treatment	Dubar	708
Ovarian tumors after ovariectomy	Schroender	43
Ovaries, effect of Roentgen ray upon		291
Oxygen, lack of	Schuecking	494
Oxygenated hydrogen in dermatology	Scholtz	642

P

Paget's disease	Ribbert	691
Pain in epigastrium, significance of	Riedel	553
Palsy, brachial	Clark et al	826
Pancreas, diagnosis between gallstones and cancer		201
Paralysis, family spastic		439
general, due to tuberculosis		440
infantile, pathology of		220
ischemic		219
of uterine muscle	Tussenbroek	754
organic sign of	Grasset	829
tabes, syphilitic question, the		220
Paratyphoid infection*	Taussig	337
Paresis after spontaneous delivery		435
curability of	Dana	499
Paraffin in gynecology	Stolz	290
method of embedding	Henke et al	288
Parosmia	Munger	568
Patella, dislocation of		216
Pathogenesis of tuberculosis		615
Pathologic examination of cadaver 113 years old	Editorial	738
Pathology and bacteriology, review of progress*	Fisch	40
of joint contracture		756, 757
Pediatrics, review of progress*	Friedlander	78
Perforation of duodenum		427
Peritomy for corneitis	Snell	447
Peritonitis		823
suppurative, treatment	Clairmont	483
tuberculous, cure of	Reale	751
Peritonsillar abscess	Thompson	503
Permeability of the tubes for fluids	Buttenberg	822
Pertussis, treatment with pyrenol	Goldman	293
Phagocytosis, studies in		208
Physical infection	Meyer	564
Physician, duty of		478
Placenta, physiology of	Polano	291
reticulum in villi of	Possati	630
Pleura, tumor of	Muus	290
Pleurisy, relation to tuberculosis	von Ruck	811
significance in abdominal disease	Auerbach	420
Pleuritic effusions in aged	Beaufume et al	552

SUBJECT	AUTHOR	PAGE
Pleurotomy	Moty	746
Pneumococcus serum, anti-bodies of		208
Pneumonia	Brem	818
chronic	Rothschild	481
serum in	Knauth	689
treatment of	Northrup	295
Poisoning, tobacco		559
Polio-myelitis, acute anterior		217, 701, 830
Polyneuritis cerebri menieriformis	Berger	830
Potassium in tuberculous peritonitis		751
iodide influence of staphylococcus albus	Western	766
Pregnancy, cancer complicating		212
decidua cells in cervix	Blumberg	630
early fetal heart sounds in	Sarwey	822
twin, degeneration of ovum	Wagner	881
Preventive medicine, history of*	Crandall	523
Progenitor thyreopraver	Lanz	424
Proper diet in tropics*	Wiley	541
Prostate, carcinoma of, radical cure		831
enlarged, treatment	Lewis	889
enucleation in old age	Freyer	369
hypertrophied, operation in		651
hypertrophy of*	Johnson	610
hypertrophy of, treatment	Cabot	702
use of cystoscope		222
Prostatectomy, incontinence as a sequel	Ruggles	442
indication and value of		222
perineal	Young	303
Prostatitis, acute	Lydston	405
Prostatism without enlargement of prostate	Chetwood	442
Psammoma of maxillary sinus	Munro	640
Puerperal fever	Herman	357
treatment		359
Pulmonary cavities, percussion of	Erni	623
tuberculosis, early diagnosis	Blume	688
pathogenesis	Weleminsky	691
routes of infection		198
Pyelitis in infancy	Freeman	496
treatment	Kelly	441
Pyemia, puerperal, treatment	Bumm	692
Pyrenol in pertussis		293

Q

Quinquad phenomenon, the	Levionik	278
--------------------------------	----------------	-----

R

Radiotherapy in sarcoma		620
statistics on	Bisserie et al	571
Radium in treatment of nevus		304
in treatment of trachoma		307
Radius, fracture, deformities in		562
Rectum, cancer of		745
cancer of, operation for	Goullioud et al	619
Red-leg	Haven et al	491

SUBJECT	AUTHOR	PAGE
Refraction, determination of errors.....	Spratt.....	708
Relation of the defective to the community.....	Wyman.....	402
Relations of mind and nervous system*.....	Chaddock.....	245
Renal calculi, diagnosis .....	.....	303
calculus	Fenwick.....	638
tuberculosis, diagnosis.....	Casper.....	283
Resection of carcinomatous stomach .....	.....	281
of turbinate .....	.....	762
Respiration, cardiopulmonary	Binetti.....	427
Resuscitation of asphyxiated infants .....	.....	291, 292
Retina, separation of, cases .....	.....	228
separation of, treatment .....	.....	227
Retinitis punctata albescens	Pascheff.....	448
Retinoscopy, rapid	Thompson.....	708
Rheumatism, gonorrheal.....	.....	566
in childhood.....	Deale.....	825
Rheumatoid arthritis, treatment of.....	Orr.....	296
Ringworm, scalp, treatment	Fox.....	446
Roentgen rays, effect upon ovaries	Halberstaedter.....	291
in Addison's disease	Golubinin.....	553
Roentgen ray in leukemia.....	.....	429, 430, 431
Roentgen ray in treatment of nevus.....	.....	305
Rupture of biliary passages .....	.....	200
of quadriceps extensor treatment.....	Quenu et al.....	282
of tendon of biceps	Keen.....	634
of uterus during labor, treatment.....	.....	211

S

Saccharine-saline injections.....	Fox.....	377
Sacro-iliac disease in young child.....	Thorndike.....	438
Sarcoma of choroid, detachment of retina in.....	Parsons.....	644
of malar, treatment	Walther.....	620
visceral, in children	Alfaro et al.....	882
• Scarlet fever, bodies in blister fluid	Field.....	691
serum therapy of	Kolly.....	354
streptococcus in .....	.....	496
School children, nervous diseases of	Meyer.....	500
School disease, relation of school methods to.....	.....	435
Schools, medical inspection of.....	.....	486
Sclerosis, eye symptoms in	Uthoff.....	767
multiple .....	.....	700
Sclerotic, transillumination of.....	Swanzy.....	376
Scoliosis, deviation of spinous processes	Freiberg.....	298
Scoliotic deviations, location of	Altdorf.....	564
Segregators, bladder .....	.....	302
Semeiology of diseases of nervous system.....	Babinski.....	167
Sensations, location of temperature and pain	Spillerc.....	500
Sepsis post abortum	Jonas.....	178
Sera, anti-bodies of .....	.....	208
normal, antibacteriolytic substances of .....	.....	209
Serum therapy of scarlet fever .....	.....	354
Sexes, differentiation of	Hirschfield.....	755
Shock and hemorrhage, prevention of.....	Crile.....	550
Shoulder, congenital dislocation of.....	Peckham.....	498
Shoulders, stiff, treatment of.....	.....	366

SUBJECT	AUTHOR	PAGE
Silver fork deformity, the.....	Allison.....	188
Situs inversus, case of.....	.....	197
Skiagraphy of stomach and intestines.....	Hulst.....	809
Skin, edema of, histologic studies.....	Ziegler.....	288
Skin, maladies of.....	.....	446
Smallpox, etiology of.....	.....	555
Society proceedings.....	229, 310, 449, 450, 647,	900
Sodium salicylate, intravenous injections.....	Mendel.....	353
Solutions in human stomach, physical properties of.....	.....	198
Spine, fracture of.....	.....	883
tuberculosis.....	Willard.....	885
Spinal cord, surgery of.....	.....	561
Spirochæte pallida in syphilitic tissues.....	Kraus and Prantschoff.....	811
staining of.....	.....	627, 687
the.....	Chaudinn.....	878
in syphilis.....	Schaudinn et al.....	555
Sputum, dissemination of streptococci through.....	Hamilton.....	436
significance of bacilli in.....	.....	426
St. Louis Charity Hospital*.....	Editorial.....	273
Staining method for tubercle bacilli.....	.....	352
Staphylococcus exudates.....	Hoke.....	821
Stenosis of esophagus, esophagoscope in.....	.....	482
Stomach, anastomosis with esophagus.....	Sauerbruch.....	280
cancer of.....	Graham.....	741
carcinoma of.....	Scudder.....	484
carcinomatous, resection of.....	Kelling.....	281
chronic ulcer of.....	Mayo.....	812
dilatation of.....	.....	810
fasting, diagnostic value of contents.....	Ackermann.....	481
foreign bodies in.....	.....	744
new method of obtaining contents.....	Carnot.....	286
physical properties of solutions in.....	.....	198
skiagraphy of.....	.....	809
test for hyperacidity of contents.....	Cipollina.....	286
transillumination of.....	.....	203
ulcer of.....	.....	741, 870
Stools, white, of nursing.....	Juillet.....	696
Stovaine, use of.....	Coakley.....	504
Streptococci, agglutination of.....	Rosswall.....	277
dissemination through sputum.....	.....	436
Streptococcus in scarlet fever.....	.....	496
serum, anti-bodies of.....	.....	208
Stricture, esophageal.....	Norfit.....	183
of deep urethra.....	.....	832
urethral.....	Harrison.....	369
Struma, intratracheal.....	Pfeiffer.....	618
Superstition in medicine*.....	Seelig.....	515
Supra-renal preparations in disease of esophagus.....	.....	199
Suppuration of mesenteric lymph nodes.....	Pegram.....	497
Surgical physiology.....	Crile.....	686
Surgery, comparative.....	Farris et al.....	549
modern, dangers.....	Block.....	330
of hepatic duct.....	Quenn.....	348
of large intestines.....	.....	423
of posterior mediastinum.....	Faure.....	425
of spinal cord.....	Selburg.....	561

SUBJECT	AUTHOR	PAGE
Surgery, orthopedic.....	Tubby.....	884
Surgical tuberculosis in abdominal cavity.....	Mayo.....	422
Surgery, review of progress in.....	Bartlett.....	9
Symblepharon of upper lid.....	Mazet.....	645
Symptom of Graves' disease, new.....		202
Syphilis and longevity.....	Hyde.....	505
etiology of.....		555, 892
Justus reaction in.....	Pollio and Fontana.....	285
late hereditary.....	Campbell.....	836
relation to tabes dorsalis.....	Hudovering et al.....	298
spirochæte, the.....	Editorial.....	806
spirochæte of.....	Fanoni.....	836
treatment.....	Pollock.....	305
Syringomyelia, ætiology.....	Curshmann.....	829
Systolic murmur, abdominal.....		474

T

Tabes dorsalis.....		221
dorsalis and psychosis.....	Bornstein.....	367
dorsalis, relation to paralysis.....	Cotton.....	636
dorsalis, relation of syphilis to.....		298
dorsalis, return of knee reflex.....	Donath.....	700
sudden death in.....	Goldflam.....	887
Tape worm, therapy of.....		204
Tarsalgia, tuberculous.....	Thevenot.....	698
Tendo Achilles jerk in diphtheria.....	Rolleston.....	635
reflex of*.....	Chaddock.....	778
Tendon transportation, misuse of.....	Oppenheim.....	299
Test for acid in diabetic urine.....		286
for acetone in urine.....		621, 747
for bile pigment.....		351-352
for detecting albumen in urine.....	Ravold.....	368
for disease of heart.....		426
for electric conductivity of urine.....	Kolischer et al.....	702
for indican.....		816
for hyperacidity of stomach contents.....		286
for lactic acid.....		748
for pus in urine.....		622
Widal, for typhoid.....		428
Tests for hearing, new apparatus.....	Bryant.....	444
Testicles, diagnostic puncture of.....	Posner.....	817
Testing ocular muscle balance for near and distant vision.....		228
Testing vision, new charts for.....	Black.....	573
Tetanus, statistical study.....	Anders et al.....	682
treatment.....	Rogers.....	625
Therapeutic value of hydrochloric acid.....	Chase.....	810
Therapeutics, review of progress in.....	Taussig.....	23
Thoracic duct, wounds of.....		684
Thyreopriva tetania.....	Lanz.....	425
Thyreopriver progenitur.....		424
Tic-douloureux from sinus pressures.....		224
Tissues in embryos, mammals and tumors.....	Krompecher.....	690
Tobacco, effect in health and disease.....		616
poisoning.....	Pieraccini.....	559
Tongue, enchondroma of.....		483

SUBJECT	AUTHOR	PAGE
Tonsil, pharyngeal, diphtheria of.....		294
Tonsillotomy, hemorrhage following.....	Smith.....	569
Torticollis, recurrence after operation.....	Schanz.....	439
treatment.....	Hohmann.....	498
Toxemia, intestinal.....	Friedlander.....	3 8
Toxins, are they ferments?.....	Lieberman.....	753
Trachea, foreign body in.....		477
Tracheostenosis, thymic.....	Carter.....	568
Trachoma, cure by radium.....	Cohn.....	307
Transplantation of tendon, misuse of.....		299
Treatment of acidotic and sugar states from traumatism*.....	Butler.....	711
of acute anterior poliomyelitis.....		217
of acute coryza.....		444
of appendicitis.....		482
of angioma of scalp.....		872
of arthritis of knee.....	Gallaird.....	566
of Basedow's disease.....		812, 887
of biliary fistulæ.....		871
of Bright's disease.....		624, 637
of bronchitis.....		286
of burns.....	Sneve.....	619
of cancer by radiotherapy.....	Valude.....	839
of cancer of breast.....		200
of cancer of rectum.....		745
of cerebro-spinal meningitis.....		354, 559
of club-foot.....	McKenzie.....	298
of congenital dislocation of hip.....		218, 438, 633
of condylomata acuminata.....	Schein.....	558
of constipation.....		554, 876
of diabetes mellitus.....		205, 623, 664
of disease of the kidney.....		442
of diseases of stomach.....		546
of eclampsia.....		493
of empyema of mastoid.....		763
of enlarged prostate.....		889
of foreign bodies in esophagus.....		200
of fracture of scaphoid.....		633
of glaucoma.....		897
of gonorrhœa.....		761
of gonorrheal arthritis.....		488, 563
of gout.....		869
of hemoptysis.....		287
of hemorrhage.....		305
of hemorrhage following tonsillotomies.....	Heuking.....	445
of hemorrhoids.....		550
of hip joint disease.....		635
of hyperacidity of gastric secretions.....	Albu.....	489
of inoperable disease of orbit.....	Bull.....	645
of isochymia.....		869
of leukemia.....		429, 430, 431
of locomotor ataxia.....		366
of luxation of shoulder.....	Whitman.....	698
of mastoid inflammation.....		890
of maxillary sinus disease.....		443
of menorrhagia.....		629

SUBJECT	AUTHOR	PAGE
Treatment of nephritis in childhood		823
of nevus		304, 305
of non-cancerous affections of stomach	Mayo-Robson ..	814
of otitis media		705
of perineal abscess		888
of pertussis with pyrenol		293
of pneumonia		295
of prostatic hypertrophy		702
of puerperal pyemia		692
of purulent meningitis	Kummell ..	814
of pyelitis		441, 889
of scalp ringworm		446
of renal tuberculosis		283
of rheumatoid arthritis		296
of rupture of quadriceps extensor		282
of sarcoma of malar		620
of senile ectropion		227
of separation of retina		227
of stiff shoulders	Schanz ..	366
of suppurative peritonitis		483
of syphilis		305
of tetanus		625
of torticollis ..		498
of trachoma		307
of tuberculosis ..		750
of tuberculosis conditions of spine		885
of tuberculosis of bone		699
of tuberculosis of kidney		502
of tuberculosis of larynx ..		503
of tuberculosis of lung		489
of ulcer of stomach		870
of ulcer of stomach, complications following	Reichmann ..	547
of uterine rupture		211
of uremia		881
of vertigo	Tretop ..	639
of wounds of ureter ..	Bernasgoni et al.	832
Trichorrhæxis nodosa	Heidingsfeld ..	707
Tubercle bacilli, new stain	Wile ..	352
bacilli in sputum	Spengler ..	426
of choroid		768
tibial, separation of	Wollenberg ..	366
Tubercular infection, Behring's theory of		419
Tuberculin	McCall-Anderson ..	836
in nursing women	Binswanger ..	755
reaction in childhood	Schick ..	632
Tuberculosis, diagnostic puncture	Goggia ..	747
early diagnosis	Blume ..	748
fight against	Editorial ..	613
injection fever in	Kohler et al.	621
intestinal in nursling	Dudreuil ..	631
joint disease		658
of kidney		502, 638
latent	Weichelbaum ..	492
of larynx	Dempel ..	503
of mastoid process		225

SUBJECT	AUTHOR	PAGE
Tuberculosis, paralysis due to.....	Klippel.....	440
ports of entry in childhood.....	Piettre.....	631
premenstrual fever in.....	Krans.....	552
pulmonary, creosote in.....	Taylor.....	489
pulmonary, pathogenesis.....		615, 691
relation of mesenteric glands.....	Rosenberger.....	742
renal, diagnosis of.....		283, 353
surgical in abdominal cavity.....	Mayo.....	422
women, menstrual fever of.....	Franck.....	873
Tumor, ovarian, epileptic attacks in.....	Russell.....	756
of pleura.....		290
etiology of.....	Hertwig.....	626
malignant, of mice.....	Ehrlich et al.....	753
Turbinate, cyst of.....		763
inferior, resection of.....	Forselles.....	762
lower, result of cauterization.....		226
Typhoid bacilli, virulence of.....		431
coxitis.....		219
diagnostic, Ficker's.....		210
fever, bone marrow in.....		492
fever, diagnosis of.....		869, 874
hypertrophic myopathy following.....		221
in children.....		216
quinine in.....	Curlo et al.....	751
water and polyuria in.....	Cushing.....	347
Widal test for.....	Aaser.....	428
urine, methylen blue reaction in.....	Russo.....	874
U		
Ulcer, duodenal.....		201
of jejunum.....		199
of stomach.....		812, 870
of stomach, complications following starvation treatment.....		547
of stomach, pathogenesis.....	Block.....	741
Ulnar nerve, complete section cured.....	Chaput.....	549
Umbilical cord, hernia of.....		494
Uremia, treatment.....		881
Ureter, operations on.....		301, 302
treatment of wounds of.....		832
Ureteral calculi, diagnosis.....		303
Urethra, deep, stricture of.....	Keyes, Jr.....	832
Uric acid, determination of.....	Surveyor.....	687
Urinary calculus, diagnosis of*.....	Lewis.....	711
concretions.....	Fantino.....	620
sediments staining.....	Wederhake.....	816
tuberculosis, smegma bacillus in diagnosis.....	Young et al.....	638
clinical examination of.....	Cabot.....	370
Urine, acet-acetic acid in.....	Lindemann.....	815
acetone in.....		747
detection of albumose in.....	Fittipaldi.....	817
diabetic, test for acid in.....		285
electric conductivity of.....		702
glucose in.....	Sahli.....	816
intravesical separation of.....		222
normal, casts in.....		750

SUBJECT	AUTHOR	PAGE
Urine, test for albumen in		368
test for pus in	Goldberg	622
test new		552
Urotropin in scarlet fever		205, 553
Uterine muscle, paralysis of		754
Uterus, artificial dilation of	Sinclair	821
partial contraction of	Bar	557
retrodeviated		493
rupture of		211, 693

V

Vaccine bodies in isolated cells	Ewing	432
bodies, structure of	Ewing	373
Valgus position of foot	Hubscher	498
Variola, laboratory diagnosis of	Thompson	432
cell-inclusions in	Schrumpf	355
Vein, jugular, ligation of	Dangel	743
Vermiform appendix, removal of	McLean	345
Vesical trigone, anatomy of	Uteau	368
Viscera, post-operative prolapse of	Madelung	685
Visual requirements of enginemen and firemen	Black	377
Vomiting, recurrent		213

W

Weil's disease, cases resembling		198
Widal test for typhoid		428
Wounds of bladder		704
of neck, penetrating	Henricksen	640

X

X-ray, abuses in dermatology	Heidingsfeld	506
improved	Stover	365
in bone tuberculosis	Peckham	699

Y

Yellow fever and malaria	Rosenau et al.	820
epidemic	Editorial	670

